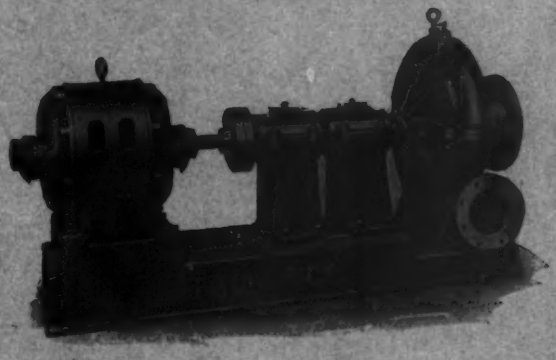
JAN 12 1925

PAPER TRADE JOURNAL

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY

Vol. LXXX. No. 2 NEW YORK AND CHICAGO, JANUARY 8, 1925 { Per annum, $4.00 / Per Copy, 10 cents

Part for Part the Frederick Stock Pump Invites Comparison



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Entered as Second-Class Matter June 28, 1879, at the New York Post Office, Under Act of Congress, March 3, 1879. — FIFTY-THIRD YEAR — ESTABLISHED 1872 — Published Every Thursday by the Lockwood Trade Journal Co., 10 E. 39th Street, New York, N. Y.

The Coe Automatic Roller Dryer for Boards

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PAPER TRADE JOURNAL

ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-THIRD YEAR

Published Every Thursday by the

LOCKWOOD TRADE JOURNAL CO., INC.

LESLIE R. PALME' PRESIDENT — GEO. S. MACDONALD VICE-PRESIDENT & TREAS — F. K. HOPPIE SECRETARY

10 EAST 39TH ST. N.Y. U. S. A

TABLE OF CONTENTS

Copyright, 1925, by Lockwood Trade Journal Co., Inc.

Paper Production Decrease in November	25
New Position for Joseph Krockenburg	25
Plans for Woodland Section's Annual Meeting	25
News Print Rehearing Asked For	25
Program for Canadian Paper Meeting	26
Big Expansion for B. C. Mill	26
Fraser Companies Redeem Bonds	26
News Print Rates Unreasonable	26
Prices Soar at Chicago	27
F. A. Kearns Retires from Active Business	27
Pilcher-Hamilton Salesmen Have Dinner	27
Horace A. Moses Makes Fine Gift	27
Philadelphia Trade Hopeful	28
Paper Box Men Meet in May	28
Broken Package Trade Custom Discussed	28
OBITUARY	30
Simplified Practice Program Endorsed	30
New York Trade Jottings	32
U. S. Paper Imports and Exports	34
Making Progress in Safety Work	34
Notes of the Toronto Industry	34
To Discuss Simplified Invoice Forms	36
EDITORIAL	38
Latest Waxed Paper Bulletin	39
Rising Sun Paper Mill Sold	39
Malone Paper Co. Completes Bridge	39
TECHNICAL SECTION	41
Forest Research Activities	46
COST SECTION	51
Imports of Paper and Paper Stock	56
Government Paper Bids and Awards	58
Canadian News Print Mills Busy	58
Paper Makers Chemical Co. Fire	62
Riegel & Co. Banquet Their Employees	62
Holyoke Power Case Goes to Court	62
Make Use of "Safety" Bombs	64
Robert Knowles With Reading Mills	64
Toronto Trade Starts Year Well	64
MARKET QUOTATIONS	60
NEW YORK MARKET REVIEW	62
MISCELLANEOUS MARKETS	64

Want and For Sale Advertisements, Pages 66, 67, 68 & 69

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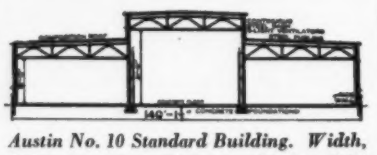

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ESTABLISHED IN 1872

PAPER TRADE JOURNAL

Vol. LXXX. No. 2 NEW YORK AND CHICAGO Thursday, January 8, 1925

PAPER PRODUCTION DECREASES FOR NOVEMBER

Production of All Varieties of Paper Reported By Identical Mills in the United States To the American Paper and Pulp Association and Co-operating Organizations for November Is Ten Per Cent Less Than for October—During the Same Period Domestic Wood Pulp Production Reported Through the United States Pulp Producers Association Decreased 15 Per Cent

The November production of paper in the United States, as reported by identical mills to the American Paper and Pulp Association and co-operating organizations, showed a decrease of 10 per cent as compared with October's production (following a 10 per cent increase in October over September), according to the Association's Monthly statistical Summary of Pulp and Paper Industry. Every grade showed a decrease in production, as compared with October.

The Summary is prepared by the American Paper and Pulp Association, as the central organization of the paper industry, in co-operation with the Binders Board Manufacturers Association, Converting Paper Mills Association, Cover Paper Association, Wrapping Paper Manufacturers Service Bureau, and Writing Paper Manufacturers Association.

The figures for November for same mills as reported in October are:

Grade	Number of mills	Production. Net tons	Shipments. Net tons	Stocks on hand end of month. Net tons
News print	64	116,343	119,329	24,627
Book	63	85,957	84,532	37,762
Paperboard	109	111,521	113,213	35,509
Wrapping	83	46,937	46,497	59,750
Bag	26	8,946	8,849	6,417
Fine	82	23,955	22,876	41,218
Tissue	45	11,625	10,946	10,074
Hanging	8	5,350	5,650	2,439
Felts	21	17,726	17,686	3,780
Other grades	58	17,594	17,636	13,983
Total all grades	...	445,954	447,214	235,559

During the same period, domestic wood pulp production decreased 15 per cent, this decrease being distributed over all grades. The November totals, (mills identical with those reporting in October) as reported by the American Paper and Pulp Association, through the United States Pulp Producers Association, are as follows:

Grade	Number of mills	Production Net tons	Used Net tons	Shipments. Net tons	Stocks on hand end of month. Net tons
Ground wood pulp	101	78,884	81,721	3,788	119,391
Sulphite, News Grade	39	38,152	35,110	3,105	11,542
Sulphite, Bleached	20	21,578	15,840	4,173	3,711
Sulphite, Easy Blchg.	5	4,676	3,850	438	1,777
Sulphite, Mitscherlich	6	6,275	5,191	924	672
Sulphate Pulp	11	11,100	9,898	1,576	4,787
Soda Pulp	12	15,709	11,797	3,954	3,198
Other than wood pulp	2	132	4	.....	57
Total, all grades	..	176,506	163,411	17,958	145,135

To Be Superintendent of Oswegatchie Co.

[FROM OUR REGULAR CORRESPONDENT.]

WATERTOWN, N. Y., January 8, 1925.—Joseph Krockenburg, who for a year and nine months served as general superintendent of the Hanna Paper Company mills, resigned that position December 15 and last week began his duties as general superintendent of the Oswegatchie Paper Company mill at Natural Dam. Mr. Krockenburg succeeds John Carroll, resigned.

The Oswegatchie mill is one of the most modern in Northern New York, owned by Watertown capital and constructed about two years ago, a short time after fire destroyed a mill on the same site.

Mr. Krockenburg is now one of the highest salaried paper mill men in this part of the state. For three years he was superintendent of the Deferiet mill of the St. Regis Company. He left the employ of that company but returned about two years ago to the Hanna mills which are controlled by the St. Regis people. The mills over which he had charge include those at Norfolk, Raymondville, Norwood and East Norfolk. It could not be learned what the plans of Mr. Carroll are. Mr. Krockenburg will make his future home in Gouverneur, a short distance from Natural Dam.

Woodland Section's Annual Meeting

The Woodland Section will hold its fifth annual meeting at the Waldorf on Wednesday, February 4. This meeting will be attended by pulp and paper mill executives, managers of woods departments, logging engineers, foresters and operatives. The program will consist of practical discussions by practical men on practical wood problems such as "New Methods of Pulpwood Logging to Reduce Costs," "Fluming, Towing and Barging Pulpwood," "Use of Decayed Pulpwood," "Practical Forest Management for Sustained Production," "Fire Prevention and Reforestation" and "General Review of the Pulpwood Situation." The United States Forest Service will be represented at this meeting by one of its economists, C. W. Boyce. The section is in close cooperation with the officials of the forest service, particularly in relation to the forestry work in New York state, and is fortunate in having as its secretary, O. M. Porter, who is a former forest service man.

Ask Rehearing in News Print

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., January 7, 1925.—Word has just been received here by the Customs Service of the Treasury Department that the Assistant Attorney-General in charge of Customs in New York, has asked the U. S. Board of General Appraisers for a rehearing in connection with its recent decision regarding the definition of standard news print paper. If the rehearing is denied by the Board it is understood that the Attorney-General will file an appeal immediately on behalf of the Secretary of the Treasury with the United States Court of Customs Appeals.

MONTREAL LOOKS FORWARD TO ANNUAL PAPER MEETING

Canadian Pulp and Paper Association Will Convene at Ritz Carlton Hotel, January 28, 29 and 30—Industrial Research Work to be One of the Important Matters for Discussion—Powell River Co., Ltd., Awards Contract for Mill Expansion—Fraser-Brace Get Contract for International's Mill Addition—Changes in Timber Agreement Upset Plans for Pulp and Paper Mill.

[FROM OUR REGULAR CORRESPONDENT.]

MONTREAL, Que., January 5, 1925.—The annual meeting of the Canadian Pulp and Paper Association will be held in the Ritz Carlton Hotel, Montreal, on January 28, 29, and 30. The first two days of the convention will be devoted to meetings of the technical and woodlands, sections of the association, these including the news print, book and writing paper, chemical pulp, mechanical pulp wrapping paper, tissue paper, paper board, coated papers and wax paper sections, all of which are well organized. These will each hold a series of separate meetings, for presentation of reports and papers, with discussions thereon, each section taking care of its own individual work, as a part of the Pulp and Paper Association.

On Friday, January 30, the various sections will unite for the annual meeting of the Pulp and Paper Association, as the main body. The usual reports will be presented, with the reading of papers on various subjects and transaction of the annual business. These general meetings will be presided over by the retiring president, George Carruthers, of Toronto, who will be eligible for re-election when the official business of the convention closes with the election of officers for 1925. This includes the president and executive council, the latter being composed of one elected member from each of the branch sections. The convention will conclude with the annual banquet of the Pulp and Paper Association, to be held on the night of January 30 at the Ritz Carlton Hotel.

Two of the principal subjects of discussion at the meeting will be educational features and industrial research work. Since the last annual meeting a special committee has been negotiating with the Federal Government, with a view to the establishment of some means by which the industry can have some share in the administration and opeartion of the Pulp and Paper Division of the Forest Products Laboratories, at present being conducted by the Dominion Government in Montreal. A report as to the progress of these negotiations will be presented by the special committee at the annual convention, and it is expected that this will be one of the major matters for discussion at the general meeting. It is hoped by the association that as a result of these negotiations some definite plans for closer co-operation between the industry and the department may be arrived at, which will be for the good of the forest industries generally, and also for the Government work in this connection.

It is expected that there will be a large attendance at the convention, with its accompanying series of branch association meetings. Men interested in forestry work and the various industries connected with forest products are expected to attend from all the provinces which have enough forests to be interested in such work, from the Atlantic to the Pacific.

Million Dollar Expansion of B. C. Mill

The Powell River Company, Limited, of Vancouver, B. C., has awarded a contract for betterment and expansion of its mill at Powell River, B. C., to Armstrong and Morrison. The immediate program calls for the construction of a new grinding mill and other undertakings at the mouth of the Powell River; work on which will be started at once. The new building, which will house additional pulp-grinding equipment, will be situated near No. 1 pier and will be of reinforced concrete. The rock fill will approximate 62,000 yards and will be put in just south of the river mouth. Concrete foundations and anchorages for additional penstock leading from the power dam to the site of the new building will also be constructed. The complete development program as outlined by the company will, it is expected by company officials, run to $4,000,000.

Fraser-Brace Gets Contract

The contract for the addition to the pulp and paper mill of the International Paper Company of Three Rivers, Que., has been awarded to Fraser-Brace Engineering Company, Limited, of Montreal. Work will be commenced immediately and pushed to completion as rapidly as possible.

Fraser Companies Redeeming Bonds

Notice is published of the calling for redemption on March 1, 1925, of $2,000,000 of Fraser Companies' 8 per cent general mortgage bonds, series "A." It is thought that the calling of these bonds for payment foreshadows financing which Fraser Companies can readily do to advantage in view of the low interest rates now prevailing, which financing would probably involve the redemption of outstanding bonds by a new issue to be made at a lower rate of interest, than that which the company now pays, and also would enable the company to fund in part several million dollars of capital expenditures made upon the company's properties since their last financing in 1921. Fraser Companies is known as one of the strongest and best managed pulp and lumber companies in Eastern Canada, and has established a high reputation for its product, and a high credit rating for its securities in United States and Canadian financial markets.

Manitoba's Paper Mill Strikes a Snag

According to a dispatch from Winnipeg, J. D. McArthur's original plans for a pulp and paper mill for Manitoba have been upset by the changes in the timber agreement, and the possibility of the province having such a plant is dark for the present. McArthur bought 3,000,000 cords of pulpwood from the Dominion Government, and agreed at public auction to pay $2.80 per cord, putting up $50,000 to bind the bargain. The terms include almost immediate construction of a pulp and paper mill. Mr. McArthur now admits that the original arrangements made for finances cannot be carried out. There is talk of endeavoring to float a company in Manitoba to proceed with the original plans. Spanish River Pulp and Paper Company, through Mr. Gray, bid $1.55 per cord for the pulpwood Mr. McArthur wanted, and by which, it has been generally assumed, he would be able to get at the upset price of 80 cents per cord or a cent or two higher. That bid, Mr. McArthur says, he regarded as intended to prevent the financing of his project. The high price which was bid for the pulpwood was enough to kill his original plans for financing, according to quoted statements of Mr. McArthur.

Rates from Thorned to New York Unreasonable

WASHINGTON, D. C., January 5, 1925.—The Interstate Commerce Commission has just announced that in the case of the Ontario Paper Company, Ltd., et al vs. the Canadian National Railways, et al rates on news print paper in carload lots from Thorned, Ont., to New York, N. Y., have been found unreasonable and reparations have been awarded.

Luther M. Walter, Nuel D. Belnap, M. C. Martin, E. M. Antrim, and H. A. Laird for complaintants.

William W. Collin, Jr., for The Spanish River Pulp & Paper Mills, Limited, and The G. H. Mead Company, and J. E. Bryan for Wisconsin Traffic Association and Kimberly-Clark Company, interveners.

Parker McCollester for defendants in the United States.

NEW YEARS BRINGS CHICAGO EVIDENCE OF HIGHER PRICES

Number of Mills Telegraph Chicago Customers That Prices of Rag Bonds and Ledgers Have Been Withdrawn, Anticipating an Advance—Sales Forces Prepare for the Good Orders That Seem To Be in Prospect—Frank A. Kearns, Second Vice-president of Bradner Smith & Co., Retires After 43 Years of Service—H. M. Gimlin goes To California To Head General Paper Co.

[FROM OUR REGULAR CORRESPONDENT.]

CHICAGO, January 5, 1925.—New Year's greetings from a number of mills to their Chicago customers took the form of a telegram advising that prices of rag bond and ledgers have been withdrawn anticipating an advance. Such action will not be a surprise to anyone who watched the steady advance in the rag market during the latter part of 1924. The new prices are not available for publication at this writing.

In some quarters the indications that mills are going to make a general upward revision of prices are looked upon with apprehension. The feeling exists that any undue haste to press an advantage from the upward swing of the business curve will retard its impetus. Others are frank in saying that any increase in 1924 inventory values should not be looked upon with a pessimistic eye.

The reaction following the last general election was probably psychological but there is nothing artificial about the feeling that exists today. Business is better. The Chicago retail stores report a holiday business that was beyond their expectations. Merchandise moving from the producer to the retailer does not always mean good business, but when it moves from the retailer's shelves into the home of the consumer a merchandising process has been completed and the volume and ease of such movement are the straws which show which way the wind blows. Paper merchants are not looking for their 1925 trade to get into its stride before the latter part of January. Last years' books are still in the closing process. The new advertising campaigns are still in the formative stage. Sales forces, however, are ready for the good orders that are in prospect.

Advances on Tissues

In the coarse market advances on tissues have been made by two mills, one of which makes the very best grade while the other is in the medium and ordinary class. Number two kraft is very firm, definite specifications have been offered the mills at lower prices than those prevailing at the close of 1924 and not accepted. Fiber papers, particularly butcher grades have advanced. The bag market is weak, quotations received January 2 being lower than at the close of the old year.

Pilcher-Hamilton Salesmen Meet

The Pilcher-Hamilton Company Salesmen Association held its second annual dinner Friday night, January 2, at the University Club of Chicago as the guests of Edgar L. Hamilton, president of the company. The Pilcher-Hamilton boys have a peppy organization and their regular meetings never fail to see the birth of some idea that maturing adds to the profit of their employer. Although the annual dinner is more of an occasion than the regular monthly affairs no set speeches are made. Their sales manager, Edgar A. Hall Jr., however, is looked to for some rather extended remarks. He told his men that all the planning and all of the sales effort by advertising and direct contact will go for naught unless there is 100 per cent help from every employee on the pay roll. Another point he emphasized is that one curt reply by a telephone operator, shipping clerk or other employee can lose a firm the best customer it has. He let it be known that it was not the intention of the Pilcher-Hamilton Company to stand still. If additional lines of profitable merchandise can be found they will be added and the sales force will be expected to see to it that the manufacturer of such merchandise will be made everlastingly glad that he gave the sale of his product to the P-H organization.

California Climate Gets Gimlin

The trade will be surprised to learn that H. M. Gimlin, vice-president of Dwight Brothers Paper Company, has fallen for the sunshine of the Golden State and has severed his connections with them to become vice-president and manager of the General Paper Company of San Francisco. H. M. says that he got Californiaitis the first time he went there and that each of his successive dozen or more trips gave him such a bad relapse that he finally made up his mind to go and stay. His 27 years in the paper business in the Middle West have made him a fixture hereabouts and San Francisco's gain is going to be quite a loss for Chicago. No formal announcement has been made as to who will succeed Mr. Gimlin with Dwight Brothers Paper Company.

An Old Standby Will Be Missing in 1925

Frank A. Kearns has retired from active business after having been with Bradner Smith & Co., 333 South Desplaines Street, 43 years. In 1881 Mr. Kearns went to work for Bradner Smith & Co. in their billing department. From the bill desk he went into the bookkeeping department, thence to the shipping room. The next step up the ladder found him in the buying department. At the time of his retirement, at the close of 1924, he was second vice-president of the firm. Forty-three years with one concern—what a world of compliment that implies for both employee and employer. Mill men and Bradner Smith & Co. customers will miss Frank Kearns but will wish him an abundance of enjoyment from the leisure he is going to have. His cronies at the Chicago Athletic and the Edgewater Golf Clubs will undoubtedly miss him while he is on a four months' cruise of the Far East, but he will probably bring back some good tales which will make up for his absence. The good wishes of PAPER TRADE JOURNAL go with Mr. Kearns wherever he may be.

Bob Butterworth Returns

Bob Butterworth of the Champion Coated Paper Company, is back at his desk after an extensive trip through Kansas, Oklahoma and Texas, calling on his trade.

Champion's Calendar a Humdinger

The waste basket will not see the 1925 calendar issued by the Champion Coated Paper Company until the very last day of the year and probably not then. If there ever was a superb example of the printers' art, this calendar is it, and anyone who is privileged to hang one on his wall will undoubtedly exclaim—"well Champion sure believes that if a thing is worth doing at all it is worth doing well." This line of march of "Father Time" is 22 x 28 inches in size and a separate sheet is given to each month. The history of Champion Coated Paper is pictorially told from the 120,000 acre source of pulp supply to finishing room.

Horace A. Moses Makes Fine Gift

[FROM OUR REGULAR CORRESPONDENT.]

HOLYOKE, Mass., January 6, 1925.—Horace A. Moses, President of the Strathmore Paper Company and also president of the Hampden County Improvement League, announced last week the gift to the League of a building on the Eastern States Exposition grounds to serve as an office and exhibit building. The building will be of two stories 72x72 feet. It will be built of concrete and brick with cast stone trimming. The directors last week re-elected Horace A. Moses president of the League and the following paper men to the executive committee: Joshua L. Brooks of Springfield, and Joseph B. Weis of Holyoke.

PHILADELPHIA TRADE ENTERS HOPEFULLY ON THE NEW YEAR

Preparations in Readiness to Go After Business With Renewed Spirit—Trade Cutting Prices on Krafts and Frequently Making Offerings at Below Mill Costs—Broken Package Trade Custom Again Under Discussion—Paper Box Men to Meet in Rochester in May—Annual Graphic Arts Dinner This Week—Riegel & Co. Entertains Employees at a Banquet.

[FROM OUR REGULAR CORRESPONDENT.]

PHILADELPHIA, Pa., January 5, 1925.—While the year ended with the customary quietness due to the holiday diversions and to the preparation of the commercial world for the coming year's business, the paper trade remained in the attitude of waiting, filling in the time with inventory and the closing of the 1924 books of its business cycle. The year was not as profitable a one as was expected, but the late months were more hopeful and before the holiday detractions the paper trade was on the upward swing. Now that the New Year is at hand the trade is again preparing to go after business with renewed spirit and vigorous sales campaigns to secure its share of the prosperity that is promised throughout 1925.

The trade, in so far as the fine paper division is concerned, is resting, figuratively if not practically. In so far as practical activity is concerned the distributors are now closing the old year accounts and recording the stock on hand in preparation for the coming business. There are few orders on hand and sofar very little interest in requirements for the future.

Coarse Papers Keenly Cut

While the local dealers have received notification that after the New Year there will be a slight advance in the price of Krafts the Quaker City is keenly seeking orders through the channels of price cutting. Three mills notified the trade that there will be an advance in the price of Krafts: The New York and Pennsylvania Company with ¼ cent advance on its L. H. Kraft, the Albermarle Paper Manufacturing Company, with a similar upward quotation and the Continental Paper and Bag Company, making a price advance of ¼ cent on its Rumford Krafts. Although these upward trends in the price quotations have appeared, the trade has been freely offering many Krafts at below the mill costs and it is with such difficulties that those papers dealers who are interested in bringing about a stabilized market have to contend. Many of the dealers believe that these competitors have been urgent sellers who have been burdened through the year's dull period with the upkeep of their organizations and who must dispose of the stocks to balance the accounts now being closed.

Trade Custom Discussed

Following the difficulties that have been brought about by the dissensions of a few of the fine paper dealers over the recently introduced Trade Custom on the Broken Packages and its charges of 25 per cent additional to the cost for these, it was deemed advisable to call a special meeting to discuss the matter. Last Friday the Fine Paper Distributors were called into session at the Bourse Restaurant, and there, under the direction of President Morgan H. Thomas, of the Philadelphia Paper Trade Association, the first steps to amend and revise plans were taken. The meeting was the largest in point of attendance held in months, with but one member, David Lindsay, Jr., absent.

In a report of the meeting the following information was given out:

"The discussion centered around the proposal to extend the 25 per cent charges for Broken Packages to all such packages whether accompanied by a full package or not. This question was passed some time ago, and was referred to the Trades Conference Board for approval by the Typothetae. The Executive Committee of the Typothetae on December Eighth considered the question and after an extended discussion, during which several alternative proposals were submitted by Typothetae members, was finally accepted on the condition that the Trades Relation Committees of the two organizations continue to study the subject for a period of six months and report back on its operation.

"Since this date there has been a continuous discussion throughout the local Trade both for and against the proposal. It developed last week that several local Paper merchants were inclined to doubt the efficacy of the proposition in remedying the evils intended, and it was decided that another conference on the subject would be best for all concerned before putting it into effect January 1st.

"At this meeting particular stress was laid on the fact that the Typothetae approval was "on suspicion," for six months, and after an extended discussion it was deemed advisable to settle the question definitely, and finally to the satisfaction of all before putting it into effect.

"A letter from the head of Philadelphia Typothetae was read indicating their desire to have the question reopened for further discussion and for the presentation of additional suggestions from Typothetæ members, so that it was finally agreed to withdraw the measure, and refer the matter back to the Trades Relation Committee. This Committee will meet with the Typothetae at an early date for a conference."

Paper Box Men to Meet in May

Having decided to abandon the old time divisional meetings the National Paper Box Manufacturers Association, whose headquarters are located at 112 N. Broad Street, have agreed upon a convention which will be held in Rochester, New York, May 26, 27 and 28. At the December meeting of the Board of Directors it was announced that former president H. O. Alderman, of Alderman and Fairchild, Rochester, and a Director of the National Association, had after reviewing the various available convention headquarters selected the Powers Hotel in that city as the meeting place with additional accommodations for those attending at the Hotel Rochester. The Maytime meeting will be held cojointly with the Western Division session which was to be held in West Baden, Illinois, this month. However, the New England Division will be held in Boston, next month at a date still to be determined. At the meeting of the Board of Directors and the Officers of the National Association held in the Bellevue Stratford Hotel here, with National President Frank Stone, of the Jesse Jones Company, Philadelphia, presiding, the question of holding frequent Geographical Divisional gatherings was discussed and it was decided that the annual convention be substituted for the smaller group sessions. In expressing the possible advantages of the annual gathering the directors and officials were unanimous in stating that more could be accomplished in a single large convention than in the divisional meetings held throughout the year in various parts of the country. In the future the National Association will hold an annual convention in some centrally located city with the Geographical Divisions Meeting, individually on days preceding the National Convention according to the new rulings adopted at the December gathering. It is also agreed that the Geographical Divisions will meet for organizations purposes on one day, with business sessions on another and that several days will be devoted to the combined gatherings if it is necessary.

Graphic Arts Dinner

Plans for the Annual Graphic Arts Dinner have been perfected and on Thursday of this week the various branches of the industry will meet in a social way at the Manufacturers Club. The Committee in Charge of Arrangements has provided for an attendance of more than 500 members of the printing, paper, supply and allied

(*Continued on page 62*)

MATHIESON System

Accuracy First

ACCURACY is the keynote in the design and operation of the Mathieson Multi-Unit Tank Car. Absolute accuracy in loading is the basic feature that creates all the other advantages of this car—maximum safety, economy and convenience in the transportation and use of Liquid Chlorine.

Upon the return of a Multi-Unit Car to our works, each of the fifteen one-ton containers is removed from the car and thoroughly cleaned, dried and inspected. The valves and fusible safety plugs are removed from each container and reset in our machine shop.

Each ton container is refilled while being individually weighed on a Toledo scale. To make doubly sure of the accuracy of the contents and of the tightness of the valves, all containers are allowed to stand for 24 hours after filling, until the Liquid Chlorine has adjusted itself to atmospheric temperature. A final inspection is then made and the weights rechecked before the containers are returned to the Multi-Unit Car.

Users of the Mathieson Multi-Unit Tank Car are assured of an even fifteen tons in each carload, each container an accurate measure of Liquid Chlorine, with none of the hazard due to possible overloading and with no shortages or uncertainty as to the quantity of material received.

The MATHIESON ALKALI WORKS Inc.
25 WEST 43rd STREET NEW YORK CITY
PHILADELPHIA PROVIDENCE CHICAGO CHARLOTTE

EAGLE THISTLE PRODUCTS

Deal Direct with the Manufacturer

Bicarbonate of Soda
Liquid Chlorine-Caustic Soda
Sesquicarbonate of Soda
Bleaching Powder-Soda Ash

Obituary

Willis S. Crandell

ALBANY, N. Y., January 5, 1925.—Willis S. Crandell, general manager of the mill department of the A. P. W. Paper Company died December 24, aged 47 years. The PAPER TRADE JOURNAL has been requested to print the following obituary of Mr. Crandell:

"About seven years since a man came to the city of Albany, N. Y. He was a paper maker, born and bred—he worked with his father in the paper mills not far from his native village, Boyntonville, Rensselaer Company in New York State, where he greeted the world, possibly with a lusty yell, 47 years ago on September 16. He was a vigorous, restless, inquisitive lad. He grew into manhood, an idealist. He had a vision. The beaten track not for him. He carried in his mind plans for a paper mill which would be unique. He awaited the opportunity to give expression to his ideas. The opportunity came when in 1917 he joined the organization of the A. P. W. Paper Company of Albany, N. Y., the treasurer of which, Wm. A. Wheeler had planned to build a mill for his company. Mr. Wheeler gave him a free hand. The result was the building of one mill first, followed a little later on by another one. These two mills stand as an enduring monument to the genius of Willis S. Crandell. They are the admiration of those competent to judge. Greater efficiency, greater speed, greater safety, the manufacture of high grade tissue at greatest economy, highest wages and lowest labor cost a ton. He had great plans for the future based upon great accomplishment. Then, in the midst of a busy life, in the early hours of December 23 he was stricken and within a day the curtain rang down upon the earthly life of Willis S. Crandell. It was a great shock to his many friends and especially to his former associates. On behalf of these the directors of the A. P. W. Paper Company at a special meeting held December 26, gave expression in simple, sincere words:

"'RESOLVED: that the following expression of their love and esteem be spread on the minutes:

"'The A. P. W. Paper Company has sustained a great loss in the sudden death of the general manager of its mill department, Mr. Willis S. Crandell.

"'By all his associates he was loved because of his generous, kindly, genial nature, as a true comrade, a staunch friend—he was honored and respected as a man of sterling character, of indomitable energy, of unsurpassed ability as a papermaker, of great organizing power, of fine inventive ingenuity, as a builder of two splendid mills not only but also as a builder of men. To the men working with him, though a strict manager, he was counselor and friend.

"'RESOLVED: that a copy of this resolution be mailed to the widow of Mr. Crandell with expression of their sympathy in her bereavement.'

"Willis S. Crandell, you have fought the battle of life, manly, nobly, fearlessly. Your life has been one of great service. Of you can be said with all sincerity:

"But, oh! 'tis good to think of them,
When we are troubled sore;
Thanks be to God that such have been
Though they walk with us no more."

Willis H. Sanburn

[FROM OUR REGULAR CORRESPONDENT.]

SPRINGFIELD, Mass., January 6, 1925.—Willis H. Sanburn, 55, died last week at his home 78 Riverview Terrace after an illness with kidney trouble. For the past five years he had been Treasurer of the Strathmore Paper Company.

He was born in Abington, Ill., in 1869 and began life as a railroad man. He married Miss Maud Rising in 1888, coming to this city about 30 years ago. He was first connected with the Agawam Paper Company and went from that company to the Strathmore Paper Company as bookkeeper. He worked up to executive positions, being made assistant treasurer eight years ago and three years later treasurer.

Besides his wife he leaves a mother, Mrs. Helen E. Sanburn of Fulton, Ill., two sisters, Mrs. Edward T. Griswold of the same place and Mrs. Thomas Noble of South Dakota and one brother, J. G. Sanburn of Abington; one son, Justus C. of this city and three grandchildren.

Flags were hung at half mast on the mills of the Strathmore Company and closing which was originally planned for New Year's Day was continued until Monday. The funeral was held Sunday afternoon at 2:30.

Alvin R. Paull

[FROM OUR REGULAR CORRESPONDENT.]

UTICA, N. Y., January 2, 1925.—Alvin R. Paull, vice president of the General Screen Corporation of this city and an inventor of paper manufacturing machinery, died recently at his home, 6½ Sherman Place, following a stroke and a brief illness. He was born in Wilmert, July 1, 1873, and at an early age entered the paper making industry at Black River. He eventually became an executive and invented several devices, including the pulp screen. He came to this city in 1917 and soon afterwards began work in establishment of the General Screen Corporation. He was inventor of the Universal Rotary Diaphragm Screen which had just been perfected and made ready for the market. The deceased is survived by his wife who was Miss Hannah Jones of Utica; a son, Theodore Paull of Cold Brook and two daughters, the Misses Grace Paull of New York and Sara Paull of Utica.

William O'Brien

[FROM OUR REGULAR CORRESPONDENT.]

KANSAS CITY, Mo., January 5, 1925.—William O'Brien, Superintendent of the boxboard mill of the Lawrence Paper Manufacturing Co., Lawrence, Kansas, since 1911, died in St. Mary's Hospital, here on Friday, December 19, following an operation. Illness was of very short duration. Mr. O'Brien having been apparently well and attending to his duties at the mill until the morning of December 13. He was taken to the hospital at Kansas City on December 15, operated on the 18, and died the following night.

Mr. O'Brien went to Lawrence from Middletown, Ohio, having been engaged in the manufacture of paper in the Miami Valley and elsewhere since childhood. The body was taken to Middletown for burial. His wife, two sons and two daughters survive him.

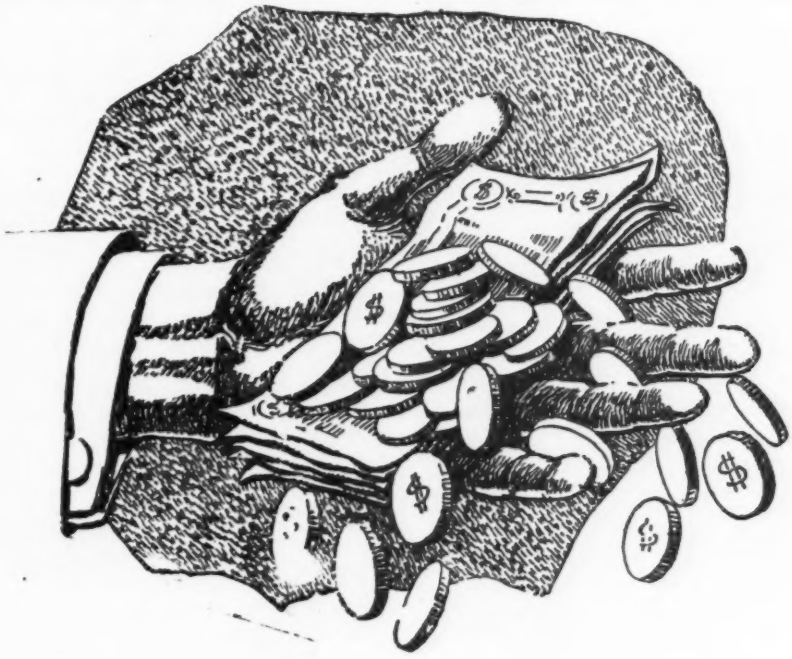
William B. Abrams

YORK, Pa., January 5, 1925.—William B. Abrams, superintendent of the Schmidt & Ault Paper Company's mill here, died at the York Hospital last Friday noon from myocarditis complicated with uremic poisoning. He had been ill a month. Mr. Abrams was superintendent of the Schmidt & Ault mill during 1924 and previous to that had been associated with the Stickles Steam Specialties Company and was located at Philadelphia. The funeral was held today under the auspices of Eastern Star Lodge, No. 186, F. & A. M., of which Mr. Abrams had been a member. The interment was in Union Dale Cemetery, North Side, Pittsburgh, Pa.

Endorse Simplified Practice Program

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., January 7, 1925.—The Simplified Practice Division of the Department of Commerce has received a letter from the National Paper Trade Association endorsing the simplified practice programs which is being worked out by the Division with the tissue paper manufacturers.



Without *this* Machine---Profits *are* Falling Through Your Fingers

If you could eliminate foam spots and lumps from your paper; if you could make your paper of uniform caliper easily and quickly without the use of slices and aprons; if you could, without increasing your expense, make a stronger paper of better formation; if you could feed the stock onto the wire of your Fourdrinier machine at any speed desired, and have it flow easily and freely; if you could do these things you would be making better paper at a lower cost.

These are exactly the advantages given users of Voith High Pressure Stock Inlets. If you are operating a Fourdrinier machine and have not installed a Voith Inlet you are letting profits slide through your fingers.

A letter will bring you an attractive booklet giving full particulars about the Voith Inlet. Write for it today.

VALLEY IRON WORKS CO.

APPLETON, WISCONSIN

New York Office: 350 Madison Avenue

New York Trade Jottings

The News Print Service Bureau will hold its annual meeting in Montreal on January 30.

* * *

The annual meeting of the American Waxed Paper Association will be held at the Waldorf Hotel on Tuesday, February 3.

* * *

John Stadler, managing director of the Newfoundland Power & Paper Company, was a New York visitor last week, being accompanied here by Mrs. Stadler.

* * *

The Joint Committee on approved chemists of the American Paper and Pulp Association has approved for listing Arthur R. Maas of 308 East Eighth street, Los Angeles, Cal.

* * *

The Woodland Section will be represented at the meeting of the Canadian Society of Forest Engineers at Ottawa on January 28 and at the annual meeting of the Canadian Woodland Section at Montreal on January 29.

* * *

R. S. Kellogg, secretary of the News Print Service Bureau, was in Washington three days last week attending the annual meeting of the American Forestry Association. He was accompanied on the trip by Mrs. Kellogg.

* * *

Folke Sundblad, of Bulkley, Dunton & Co., 15-77 Duane street, has just returned from a trip of several months duration to the various pulp and paper producing countries in Europe, and he reports steadily increasing confidence and broadening of trade.

* * *

The board of directors of the International Paper Company has declared a regular quarterly dividend of 1½ per cent on the preferred capital stock of the company, payable January 15, to preferred stockholders of record at the close of business January 8.

* * *

On January 1, Charles W. Ballard and Sumner Ballard retired from the firm of D. S. Walton & Co., paper and paper bag dealers of 132 Franklin street. Their interest in the business has been purchased by David S. Walton, Harold L. Walton and Rudolph L. Walton.

* * *

In the item recently published regarding the vacation trip of George L. Bidwell inaccuracies occurred. Mr. Bidwell, general superintendent of the Warren Manufacturing Company, Riegelsville, N. J., has gone for a vacation trip around the world, accompanied by his wife. He will return to this country and to his duties in May.

* * *

The Binderboard Association will hold its monthly meeting on January 13 at the rooms of the American Paper and Pulp Association when the program will consist of a discussion of the standardization proposal on the basis of simplification outlined by the Department of Commerce. Conditions prevailing in the binderboard field during 1924 will also be reviewed and plans made for the activities of 1925.

* * *

Hyman Jacobs of 305 Broadway, has been appointed sole Eastern representative for the F. M. Hall Paper Company of Shortsville, N. Y., manufacturers of the Empire Semi Crepe Napkins in flat and quarter fold. Mr. Jacobs has also received a similar appointment to represent the Bay West Paper Company of Green Bay, Wis., manufacturers of genuine water crepe napkins and white and manila interfold towels.

* * *

Wilfred Graham of the Franc-Graham Paper Company, was married Sunday, January 4, to Miss Fanny H. Edelman of New York City. The ceremony took place at the home of Miss Edelman and was performed by the Rev. Dr. Stephen S. Wise. After the ceremony a breakfast was served to about sixty guests. The couple left on an extended wedding tour which will include Atlantic City, Washington and Pinehurst.

* * *

Kentler Brothers of 136 Liberty street have been appointed exclusive United States selling agents for Braunkohlen -u Chemische Industrie—A. G., Preichow-Wellmitz, Germany, who for many years have been producing Vandyke Brown Crystals. This product is similar to what is termed Sap Brown. Kentler Brothers are also United States selling agents for F. Richter, Lille, France, manufacturers of paper maker's ultramarine blues.

* * *

The Salesmen's Association at its weekly luncheon at the Hotel Belmont, Monday, dispensed with its usual round table and spent its entire time discussing plans for the annual convention on February 3. Their program is now complete for both their morning and banquet sessions except that the formal acceptance of one of the banquet speakers has not been received. The Salesmen anticipate having the biggest and most successful meeting they have ever held.

* * *

O. M. Porter, assistant secretary of the American Paper and Pulp Association, is working out the program for the annual meeting of the New York section of the American Foresters which will be held in Albany on January 30. The Foresters of New York state are endeavoring to work out a satisfactory state forestry policy which will assure adequate fire prevention and increased timber production. Several of the pulp and paper companies of the state will be represented at this meeting by their foresters.

President Carruthers Speaks Hopefully

George Carrutehrs, of Toronto, President of the Canadian Pulp and Paper Association, says that there is every reason to believe that the coming year will be a period of decided development in news print. He states that, during the last eighteen months, no fewer than eleven new machines, some of which are the largest in the world, have been added to the productive capacity of Canadian news print mills and that the expansion is still going on and is likely to continue. He declares that the two main causes which have contributed to the development of the industry, are the embargoes placed upon the exportation of pulpwood from Crown lands by the various provinces and the removal of the customs duties on wood pulp and news print paper by the United States which throws open the American market to Canadian products.

Interlake Tissue Mills Reunion

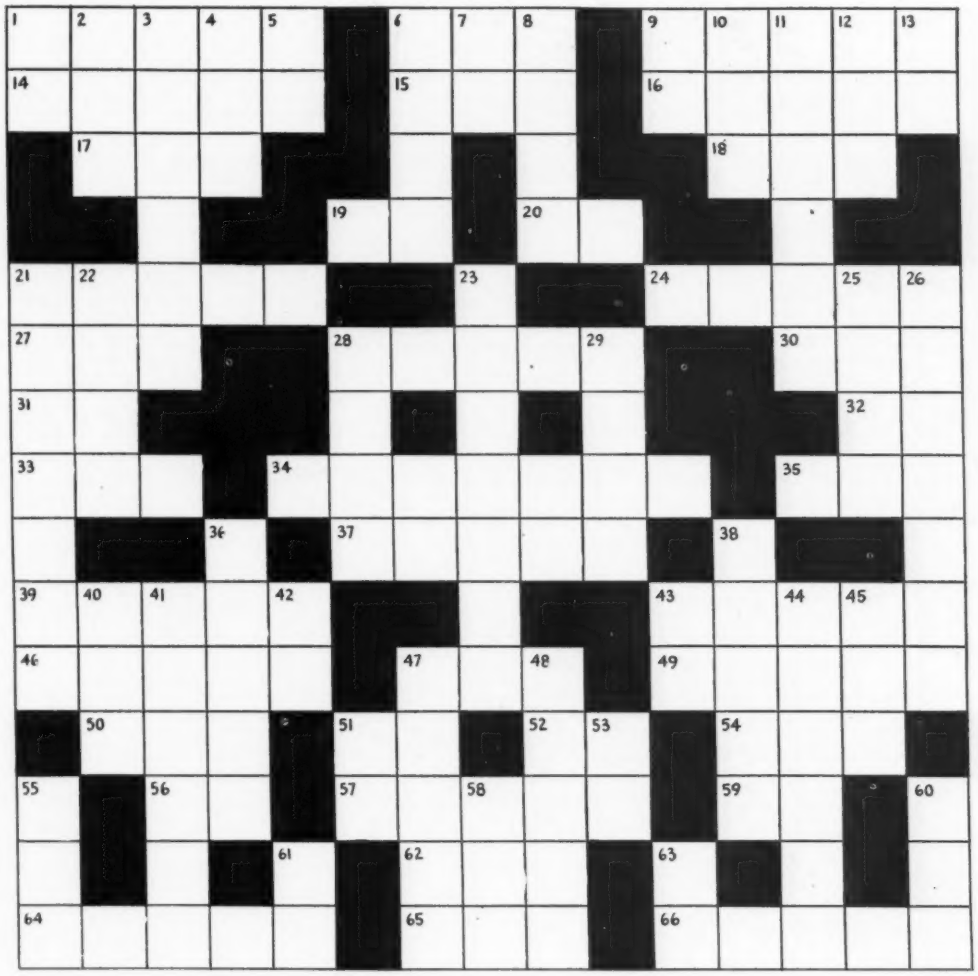
During the past few days, an important conference of the staff of the Interlake Tissue Mills Company was held in Toronto and all were entertained to a theatre party and dinner. William Innis and F. L. Falconer, of Montreal, who represent the company in that city, were in attendance. The annual meeting of the Interlake Tissue Mills will be held in the near future and it is understood that the company has enjoyed a very fair year's business.

Appointment for Robert Gillette

HOLYOKE, Mass., January 6, 1925.—Robert Gillette, manager of the stationery department of the Hampshire Paper Company, has been appointed district deputy for the 17th Masonic district of this state.

Appointed Paper Mill Supervisor

CHICAGO, Ill., January 6, 1925.—S. T. Johnson, formerly of the Lancaster (Ohio) Mill of U. S. Gypsum Company has been appointed Paper Mill Supervisor with offices in Chicago.



HORIZONTAL

1. A manufacturer of paper mill machinery.
6. Distant.
9. A felted cellulose product.
14. Supports a lighter.
15. I (Latin).
16. Made from sulphate pulp.
17. Attention (abbr.).
18. Same as number 17.
19. This thing.
20. Behold.
21. Carrying sails and yards (noun pl.).
24. Repairs.
27. A hard working insect.
28. Velocity.
30. Summit.
31. Initials of a Canadian Railroad.
32. Mixed type.
33. Covers the head.
34. Where "your paper is made," (noun pl.).
35. A Growth; cebaceous cyst.
37. Fastened; like a pulley to a shaft or a fly bar in a bandless roll.
39. An eastern potentate.
43. A place to keep an animal.
46. Vessels (usually earthenware).
47. A primary color.
49. The place or court where an action is laid. (Legal term.)
50. Limited (abbr.).
51. Dad.
52. Each (abbr.).
54. Anglican (abbr.).
56. Two pulp wood trees (initials).
57. Stretches across.
59. Personal pronoun.
62. Possessive pronoun.
64. Manufacturing establishment.
65. An English river.
66. Builds best beaters.

VERTICAL

1. College scientific degree.
2. A Phillipine negrito tribe; also Latin for so or thus.
3. Most recent.
4. A high explosive.
5. Initials of large sparsely populated western State.
6. Runs over the dryers.
7. Abbr. of word meaning farming.
8. Revolving part of No. 34 Horizontal.
9. A chewing gum made by Wrigley.
10. A Southern constellation; the Altar.
11. To protect an invention against imitation.
12. After, or soon; (old English).
13. Right (abbr.).
21. An apparatus.
22. A Hindu coin; also a girl's name.
23. A modern kind (two words).
25. Slang for drugs.
26. The longest part of No. 8.
28. Search.
29. First name of a well-known American authority on hand made papers.
36. Units of pulp wood.
38. In your dryers.
40. A shoemaker's tool.
41. Improved.
42. Baccalaureus Scientiarum (Latin).
43. A patriotic organization formed after the civil war.
44. To render softer.
45. A small boss or shoulder on a device.
47. Fast.
48. Thick.
51. Post script.
53. Like.
55. Cuts pulp wood.
58. Consumed.
60. Belonging to a man.
61. You and me.
63. The same (Latin abbr.).

PAPER AND PAPER STOCKS IMPORTS AND EXPORTS OF THE UNITED STATES

For the Month Ending October 31, 1924, and for the Ten Months Ended October 31, 1924, as Compared with Corresponding Months of Previous Year

IMPORTS—PAPER.

Paper and Manufactures of	October 1923 Quantity	October 1923 Value	October 1924 Quantity	October 1924 Value	Ten Months Ending October 31 1923 Quantity	Ten Months Ending October 31 1923 Value	Ten Months Ending October 31 1924 Quantity	Ten Months Ending October 31 1924 Value
Paper, except printed matter (total)	.....	$10,126,196	.....	$9,981,380	.....	$96,201,937	.....	$97,893,694
Printing paper—								
Standard news print...lbs..Free	228,847,445	8,580,090	228,242,031	8,471,653	2,169,952,774	81,078,382	2,237,842,605	83,945,638
All other, n. e. s. ...lbs..dut.	1,735,918	80,397	2,700,263	117,530	18,392,435	697,998	23,167,051	968,631
Grease-proof and water-proof papers.lbs..dut.	298,060	27,372	54,209	9,008	2,462,558	229,297	1,166,825	132,541
Wrapping paper ...lbs..dut.	5,112,830	403,385	.....	.....	75,274,930	3,360,955	.....	.....
Kraft wrapping paper...lbs..dut.	.....	.....	1,876,919	67,438	.....	.....	24,268,112	927,620
All other wrapping paper...lbs..dut.	.....	.....	1,491,739	62,027	.....	.....	19,537,261	756,064
Writing, drawing, bond, etc...lbs..dut.	322,717	52,508	202,079	56,584	2,985,771	565,010	2,153,641	493,195
Surface coated ...lbs..dut.	129,043	26,817	298,393	54,855	958,421	264,187	1,617,263	377,977
Tissue paper ...lbs..dut.	117,158	54,429	377,565	134,474	1,607,838	772,437	2,039,467	825,689
Paper boards—								
Pulp boards in rolls...lbs..dut.	4,752,654	137,761	7,027,833	188,410	69,112,238	1,961,123	66,911,600	1,849,365
Other paper boards, n. e. s. ...lbs..dut.	1,549,115	65,121	3,074,309	72,255	20,574,458	604,477	26,062,333	607,032
Cigarette paper, cigarette books and covers ...lbs..dut.	869,974	221,703	1,004,206	241,460	9,728,511	2,555,529	8,250,050	2,157,709
Photographic paper ...lbs..dut.	288,350	56,424	200,404	43,202	1,794,212	288,491	2,914,914	588,307
Hanging paper ...lbs..dut.	272,706	40,889	1,203,350	55,157	7,269,382	417,332	11,708,689	509,087
Paper boxes ...lbs..dut.	.....	.....	131,225	100,240	.....	.....	1,400,930	889,150
Decalcomania, not printed...lbs..free	28,757	9,204	58,534	13,866	317,063	83,606	410,869	97,642
All other ...dut.	.....	374,696	.....	293,221	.....	3,223,113	.....	2,770,047
Books and other printed matter (total) ...	.....	830,572	.....	877,685	.....	7,305,016	.....	7,935,044
Books and pamphlets in foreign languages ...lbs..free	186,020	87,343	239,479	147,841	1,323,637	833,947	1,982,426	1,191,494
Books, maps, music, etc., 20 years old ...lbs..free	37,809	147 892	34,937	85,761	302,429	1,401,700	306.516	1,347,615
Other books, etc...lbs..free	154,377	96,605	230,030	133.716	1,878,657	1,344,518	2,010,963	1,385,321
Books, pamphlets, and music, n. e. s.lbs..dut.	364,103	274,176	329,723	250,160	2,487,053	1,978,465	2,776,843	1,942,680
Maps, charts and other printed matter, n. e. s...dut.	.....	78,518	.....	75,062	.....	566,310	.....	693,586
Lithographically printed matter, n. e. s....								
Cigar bands, labels and flaps...lbs..dut.	12.214	13.617	6,739	9,596	215,196	174,653	94,533	121,550
Decalcomanias ...lbs..dut.	14,657	22,973	10,526	31,115	139,882	204,686	215,928	305,885
All other ...dut.	.....	109.448	.....	144,434	.....	800,737	.....	946,913
CRUDE PAPER STOCK.								
Rags for paper stock...lbs..free	36,136,901	625.502	53,175,609	1,390.666	327,054,429	5,834,582	412,596,427	9,188,625
Waste, bagging, waste paper, etc..lbs..free	10,301,121	126.451	9,785,555	109,980	114,235,863	1.565,913	90.026,288	1,042,756
Old rope and all other paper stock.lbs..free	6,463,775	323.552	8,045,500	442,220	85,025,393	3,845,620	82,617.933	4,365,097
WOOD PULP.								
Mechanical pulp ...tons..free	23,469	909,702	27,209	900,663	208,514	7,297,225	171,507	5,774,973
Chemical wood pulp—								
Sulphite, unbleached...tons..free	39,289	2,349,888	62.854	3,268.082	384,079	21.819,407	452.407	24.202,627
Sulphite, bleached...tons..free	20,527	1,823,111	26,918	1,947,550	208,926	18,675,338	222,351	17,165,169
Total sulphite ...tons	59,816	4,172,999	89,772	5,215,632	593,005	40,494,745	674,758	41,367,796
Sulphate pulp, unbleached (kraft pulp) ...tons..free	20,614	1,384,035	29,373	1,601,926	192,097	12,000,105	232,648	13,323,690
Sulphate pulp, bleached...tons..free	1,161	92,000	1,603	97,165	14,521	1,619.057	16,888	948,684
Other pulp ...tons..free	99	5,837	163	15,856	5,037	309,919	1,751	107,338
PULP WOOD								
Rough ...free..cord	29,341	270,656	28,699	307,658	356,796	3.308,160	254.639	2,650,615
Peeled ...free..cord	71,399	703,213	76,615	731,971	765,715	7.563,226	777,031	7,599,451
Rossed ...free..cord	14,600	201,465	17,010	202,142	102.237	1,310,511	106,603	1,383,963
CHEMICALS AND OTHER PAPER MAKERS' MATERIALS.								
Colors, dyes, stains, color acids, and color bases, n. e. s...lbs..dut.	287,366	476,565	426,848	631,870	2,697,726	3,655,326	2,655,095	3,358,075
Casein or lactarene...lbs..dut.	1,302,592	187,389	984,980	74,285	23,890,465	4,090,508	14.956.139	1,185,208
Kaolin, china, and paper clay...tons..dut.	31,193	325,931	25,559	247,539	247,436	2.734.787	265.457	2,723,577

(*Continued on page 36*)

Safety Work Making Progress

A. P. Costigane, Toronto, Secretary and Engineer of the Ontario Pulp and Paper Makers' Safety Association, paid a visit to the Mille Roches plant of the Provincial Paper Mills and the Cornwall plant of the Howard Smith Paper Mills during the past few days. At the latter mill a meeting of the heads of the various departments was called and a profitable conference took place on ways and means to reduce the number of accidents. It is hoped by the joint co-operation of managers, heads of departments and employees to lessen substantially the frequency and severity of mishaps in the plant during the coming year. At the Mille Roche unit of the Provincial Paper Mills, the alterations and extensions are completed and several safety devices have been added, to eliminate physical hazards in the operation of the mill.

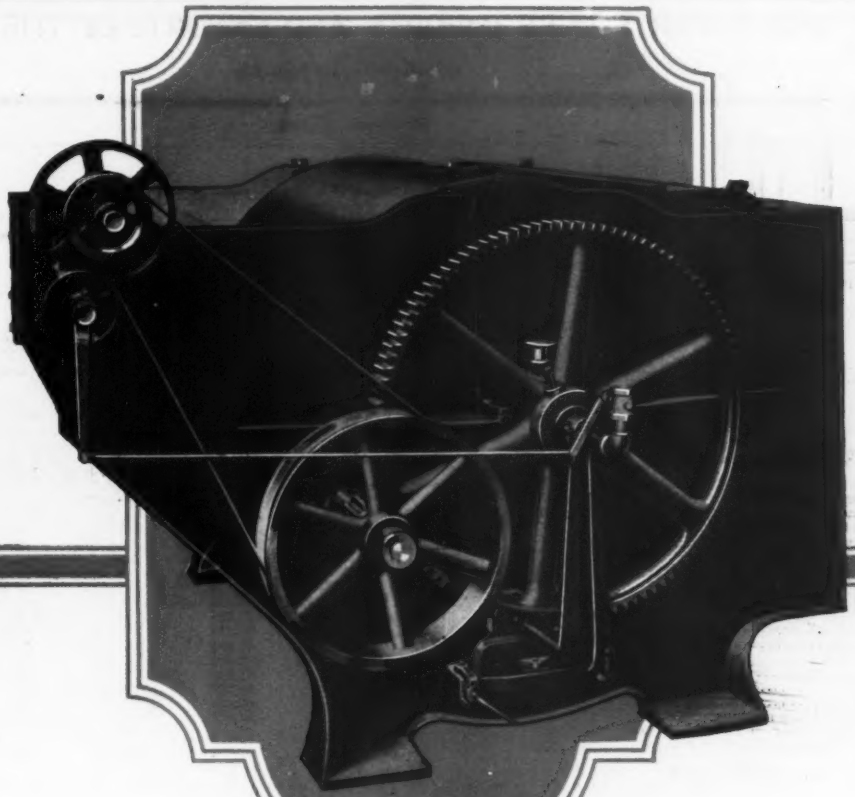
Notes and Jottings of the Toronto Trade

I. H. Weldon, president of the Provincial Paper Mills, Toronto, spent the New Year with friends in St. Thomas, Ontario.

Francis Wright, of Smith, Davidson & Wright, paper jobbers, Vancouver, B. C., has returned home after an extended business trip to Toronto, Montreal and other points, east.

R. J. Flynn, manager of Buntin, Reid Company, wholesale paper dealers, Toronto, has been re-elected Mayor of the town of Weston, near Toronto, by acclamation. He has held the position for four years.

A. K. Cameron, vice-president of A. B. Ormsby & Co., Toronto, and general manager of the Metal Single and Aiding Co. of Preston, Ont., has been appointed a director of the St. Lawrence Paper Mills, Three Rivers, Que.



The BIRD SAVE-ALL

YOUR stock handling system can easily be made a "closed system" if you provide enough Bird Save-Alls to take care of all white water before it leaves the mill.

BIRD MACHINERY

BIRD MACHINE COMPANY
South Walpole - Massachusetts

7086

PAPER AND PAPER STOCKS IMPORTS AND EXPORTS OF THE UNITED STATES

(*Continued from page 34*)

EXPORTS—PAPER.

Paper and Manufactures of	October 1923 Quantity	October 1923 Value	October 1924 Quantity	October 1924 Value	Ten Months Ending October 31 1923 Quantity	Ten Months Ending October 31 1923 Value	Ten Months Ending October 31 1924 Quantity	Ten Months Ending October 31 1924 Value
Paper, except printed matter (total)	.....	$2,123,870	.....	$2,359,486	.....	$21,569,900	.....	$20,707,424
Printing Paper—								
News Print Paper....lbs.	2,246,571	109,802	3,354,320	167,482	26,310,308	1,330,609	28,709,995	1,472,197
Book paper, not coated....lbs.	1,651,841	209,887	2,028,972	212,177	22,940,650	2,590,698	14,909,872	1,705,031
Cover paper....lbs.	146,432	26,131	84,989	18,924	1,605,044	177,842	655,213	123,306
Greaseproof and waterproof paper....lbs.	145,455	19,255	134,407	18,500	1,401,463	184,549	1,361,141	160,688
Wrapping paper—								
Kraft paper....lbs.	83,816	7,920	98,405	9,992	657,562	50,580	540,702	64,193
Other wrapping....lbs.	1,660,523	138,098	2,845,629	222,494	21,446,454	1,728,461	20,550,453	1,672,677
Writing paper, except papeteries....lbs.	351,490	73,150	383,948	61,183	5,095,264	844,705	3,906,863	618,610
Surface-coated paper....lbs.	335,243	47,432	453,322	47,698	3,415,063	521,525	2,989,454	440,848
Tissue and crêpe paper....lbs.	291,955	81,714	264,524	80,756	2,699,758	683,739	2,408,272	643,364
Toilet paper....lbs.	250,281	33,618	576,980	64,472	4,070,174	481,659	3,642,814	424,885
Paper towels and napkins....lbs.	162,556	31,067	153,580	22,810	1,028,841	174,612	1,230,785	194,983
Bristols and bristol board....lbs.	63,697	7,496	39,233	4,852	1,769,847	146,000	728,900	92,885
Paper board and straw board....lbs.	4,911,220	210,440	6,159,632	235,881	47,800,072	2,276,811	63,290,811	2,473,904
Sheathing and building paper....lbs.	391,387	19,777	1,010,291	48,290	2,905,834	137,061	4,947,025	237,133
Wall board of paper or pulp....sq. ft.	1,347,686	46,417	1,031,456	29,712	12,510,370	464,880	14,194,133	476,064
Blotting paper....lbs.	.....	.....	275,379	29,556	.....	.....	2,047,209	248,581
Filing folders, index cards and other office forms....lbs.	.....	.....	34,907	10,913	.....	.....	371,026	132,252
Cigarette paper and books....lbs.	36,296	14,085	65,436	23,244	449,122	150,925	796,716	285,325
Photographic paper....lbs.	133,489	115,740	159,036	139,093	1,223,776	1,216,690	1,401,057	1,413,320
Paper hangings (wall paper)....yard	2,821,718	52,030	1,482,937	40,356	19,204,698	480,051	19,647,205	516,876
Paper bags....lbs.	818,964	93,910	826,541	73,223	7,522,736	744,191	8,676,956	810,355
Boxes and cartons....lbs.	1,114,465	117,333	1,318,056	112,643	9,397,828	893,865	11,359,645	954,576
Carbon paper....lbs.	74,293	61,917	83,831	72,557	727,363	576,477	767,229	608,072
Envelopes....lbs.	186,155	38,616	238,339	49,756	2,293,744	451,112	2,011,522	405,891
Playing cards....pack	528,338	65,359	590,757	69,018	8,124,584	968,502	5,422,842	604,745
Cash register and adding machine paper..lbs.	114,049	12,328	172,608	15,751	951,210	102,979	1,061,989	117,078
Papeteries (writing paper in boxes)....lbs.	26,644	10,483	36,152	10,838	357,188	133,496	354,324	129,548
Other paper and paper products, n.e.s..lbs.	2,995,205	482,265	7,383,009	467,315	29,252,330	4,047,881	35,813,155	3,679,537
Books, maps, pictures, and other printed matter (total)....lbs.	5,363,874	1,871,998	5,685,688	1,821,903	41,252,522	14,663,135	45,979,506	16,177,968
Books and pamphlets....lbs.	2,817,118	986,769	3,485,277	854,808	21,836,745	7,225,715	28,058,014	8,165,362
Maps and charts....lbs.	11,898	14,823	37,640	24,656	156,425	140,716	160,364	143,455
Music in books or sheets....lbs.	69,157	32,866	57,749	31,781	472,721	292,123	538,474	326,206
Souvenir post cards....lbs.	32,307	23,127	32,154	21,754	562,250	191,645	305,778	162,545
Lithographically printed matter, except post cards and maps....lbs.	186,992	100,613	257,737	173,424	1,693,751	1,221,780	1,931,370	1,637,252
Other printed matter....lbs.	2,246,402	713,800	1,814,131	715,480	16,530,630	5,591,156	14,985,506	5,743,148
WOOD PULP AND PAPER STOCK.								
Sulphite wood pulp....tons	1,136	65,211	2,780	180,543	12,308	717,002	17,505	1,065,637
Soda wood pulp....tons	63	4,792	304	28,350	2,948	283,091	1,476	138,468
Other wood pulp....tons	210	17,565	297	32,381	2,818	149,072	4,132	413,694
Rags, and other paper stock....lbs.	10,612,371	175,369	4,330,068	87,621	90,790,911	1,589,937	100,089,089	1,724,524
PAPER AND PULP MILL MACHINERY.								
Paper and pulp mill machinery....lbs.	338,806	91,118	819,967	162,352	10,526,399	1,775,973	8,769,565	1,789,560

To Discuss Simplified Invoice Forms

In an effort to bring about economies in current commercial practice through the adoption of standard inquiry, purchase order and invoice forms, the Division of Simplified Practice, Department of Commerce, has called a conference of trade associations to be held on January 14 in the Department of Commerce. The National Association of Purchasing Agents, at whose request the meeting was called, declares that a survey by that organization indicates a potential saving of more than $15,000,000 annually to the business concerns of the country through the adoption of such standard forms.

The plan advocated by the National Association of Purchasing Agents represents the cumulative action of several years, during which industry and the railroads have been studying the problem. Three national conferences conducted by the Association for the consideration of the proposed standards have been followed by a wave of interest on the part of individuals, trade papers, and organizations. Two other national bodies, the National Association of Upholstered Furniture Manufacturers and the National Paper Box Manufacturers Association have recently indorsed the proposed form.

The advantages to printing concerns, it is declared, are leading printing houses to quote their prices on a basis of quantity production for the form advocated.

The invitations sent out by the Division of Simplified Practice call the attention of more than 1,200 trade associations to the proposals, and ask them to designate someone to represent their interests at the forthcoming meeting.

It is pointed out that there are four fundamental steps in any purchasing transaction; inquiry, selection, purchase and payment; and that the shortest, simplest and most effective methods of handling each of these four are of utmost importance to modern business. The analysis of the proposed standard invoice form, developed from a study of thousands of invoice forms in many lines of business, it is stated, showed certain terms, expressions and other data occuring with great frequency.

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Editorial

Vol. LXXX New York, January 8, 1925 No. 2
HENRY J. BERGER, Editor

COMING EVENTS

American Paper and Pulp Association, Convention and Meeting of Affiliated Associations, Waldorf-Astoria, February 2-5.
Technical Association of the Pulp and Paper Industry, Convention, Waldorf-Astoria, February 3-5.
Salesmen's Association of the Paper Industry, Convention, Waldorf-Astoria, February 2-5.

FOREIGN PAPER SALES DECLINE

The foreign paper trade of the United States during November showed a downward trend as compared with previous months but both imports and exports exceeded those of the same month of last year says the Paper Division of Department of Commerce reviewing foreign trade during November.

Prices, compared with a year ago, show a considerable re-adjustment, printing paper, wrapping paper, and boards showing a downward tendency, while grease-proof paper, photographic paper, and a number of paper specialties have risen in value. Imports of wood pulp also show a lower range of prices than quoted a year ago, but the same does not hold true of rags and other waste, which have advanced considerably since November of last year.

Exports of paper during November reached a total value of $1,999,917, a decrease of 16 per cent compared with the previous month, but an increase of 4 per cent compared with the same month in 1923. Gains as compared with a year ago were registered chiefly in the cheaper classes, notably printing paper and board, exports of the more expensive classes and specialties showing a tendency to fall off. Shipments of news print and book paper continue to show substantial gains compared with last year, exports of the former having increased 11 per cent and of the latter 15 per cent. Board exports, with the exception of wall board, were also considerably greater this year than during November, 1923, but, with the exception of bristol board, did not reach the volume of the October shipments. Exports of wrapping paper are considerably under not only the previous month's shipments but also under those for November of last year, shipments of kraft paper showing a decrease of 65 per cent and of greaseproof and other wrapping papers decreases of 5 and 12 per cent respectively. Exports of writing paper, surface-coated paper, tissue and crepe paper, were all smaller than during the same month in 1923, while among paper manufactures and specialties towels and napkins, cigarette paper and books, carbon paper, photographic paper, envelopes and cash register and adding machine paper decreases range from 5 to 30 per cent. One of the more important increases was registered in exports of boxes and cartons, which nearly doubled those of a year ago. The November exports of toilet paper, wall paper, paper bags, and papeteries also were greater than during the same month in 1923.

Imports of paper and paper products into the United States during November declined 1½ per cent in value compared with the previous month but were 6 per cent greater than during November, 1923. Imports of news print, which represents over 80 per cent of the imports, increased 4 per cent in volume, although owing to a reduction in prices there was a loss of $23,000 in the value of the imports. Canada, which furnished nearly 90 per cent of the importations, benefited chiefly from the increased purchases, receipts from the Scandinavian countries, Germany, and Finland, all registering a decrease compared with receipts from the same countries last year. Increases also occurred and receipts of other printing paper, writing and drawing paper, surface-coated paper, paper board, decalcomania paper and cigarette paper, the last ranking second only to news print in the November imports. Imports of wrapping paper, which amounted to over 6,000,000 pounds and ranked second in importance during November, 1923, amounted to only half that amount during the same month of the current year.

Imports of paper base stocks were also somewhat less than during the previous month, although exceeding those of November, 1923, by 16 per cent. Increased purchases of unbleached sulphite pulp and rags for paper stock were largely responsible for the greater part of the gain in November imports.

SHARING MANAGEMENT WITH WORKERS

A partnership plan which gives the employees of an industrial property a share in management and profits, equal in many respects to that enjoyed by the owners, is suggested for the consideration of industry generally in a report on "Sharing Management with the Workers," issued by the Russell Sage Foundation. The report is based on a study of the Partnership Plan of the Dutchess Bleachery, Inc., at Wappingers Falls, New York, which, in the opinion of Mary Van Kleeck, Director of the Department of Industrial Studies of the Foundation, is "one of the most significant of the several hundred current experiments in giving workmen a share in the management of business."

In making the report public, Miss Van Kleeck said: "The Dutchess Bleachery experience indicates affirmative answers to the much discussed questions: Is it financially safe for a company to permit its wage-earning employees to vote on questions of shop management? Do workers desire to have this share of responsibility? Lacking technical training and experience in administration, is their judgment valuable concerning questions of general policy? Will they have consideration for the interests of stockholders? The further point is made that in this case, when given power to determine policies, the employees did not use it to advance their own wages and decrease working hours regardless of the financial state of the business."

The report itself, a document of 150 pages was prepared by Ben M. Selekman, a member of the Foundation's staff, who conducted the investigation.

Mr. Selekman found that the Partnership Plan of the Dutchess Bleachery not only affords representation to employees in determining the conditions of their employment, but admits a representative of the wage-earners in the mill to the Board of Directors, turns over entirely to a board of workmen the administration of the company's houses for employees, families, assigns definite responsibility for shop management to a Board of Managers composed of six officers of the company and of six wage-earners, and provides employees with information concerning the financial condition and conduct of the business.

Three years of such co-operation, Mr. Selekman says, has transformed a community of dilapidated and unsanitary houses into a town of clean, comfortable, and happy homes, and has at the same time revolutionized the attitude of employees toward production to

such an extent that the company earned comparatively high dividends during two years when other plants in the same industry were idle because of the business depression.

"As managers, the representatives of the operatives have displayed good business judgement," says the report. "Not only have they utilized the machinery of the Partnership Plan to present and adjust grievances, but they have co-operated in the constructive tasks of running a factory. They have suggested such methods of increasing efficiency as time clocks, foremen's conferences, and mass meetings. Together with representatives of the stockholders, they elected the present manager and superintendent. The whole tenor of their participation has been not 'How much can we get out of the bleachery for ourselves?' but 'What can we do to make this a successful and efficient business enterprise for everyone concerned?

"The Partnership Plan has revolutionized the attitude of the operatives toward production. All the foremen have perceived a new alertness on this subject among the men. To cut down waste, to make certain that no goods were spoiled in the process of bleaching, to finish the greatest number of yards, meant an increase in profits and a larger net income to each operative. Here was an incentive, direct and personal, such as only proprietors of a business have heretofore experienced..

"There can be no doubt that, in spite of the obstacles yet to be overcome, the Partnership Plan has had a very real success from the point of view of the workers as well as from that of the stockholders. Not only do operatives feel that they have a stake in the success of the business, but the active owners realize that a policy of co-operative management such as obtains in the bleachery does not necessarily mean a decrease of dividends."

The conclusion of the report is in this statement: "Because of the sincerity of those who devised the plan in seeking a more democratic as well as a more personal basis for human relations in industry than has hitherto prevailed, and because of their courage in putting it into operation, the Dutchess Bleachery has achieved a place of leadership. We hope that this record of co-operation and partnership between management and operatives in the bleachery may lead to equally far-seeking experiments in other industrial establishments."

PAPER MILL EMPLOYMENT AND WAGES

The rather surprising decrease of 10 per cent in paper production for November, just reported by the American Paper and Pulp Association is emphasized by employment and wage figures in the paper and pulp industry for November, just issued by the Bureau of Labor Statistics of the Department of Labor. The Bureau received replies from 195 paper and pulp plants which gave their employment in October at 50,498 and in November at 50,483. The payrolls in these plants decreased from $1,335,983 in October to $1,219,203 in November a decrease of 1.3 per cent.

The figures for November as compared with November of the year preceding were, however, more encouraging. The Bureau received replies from 143 paper and pulp plants which gave their employment in November of last year at 41,217 increasing slightly in the same month of this year to 41,374 an increase of .4 per cent. The payrolls in these plants also increased from $1,061,058 in November of last year to $1,084,173 in the same month of this year, an increase of 2.2 per cent.

One hundred and forty-six paper box factories gave their employment in October at 16,044 increasing in November to 16,061, an increase of .1 per cent. The payrolls in these plants also increased from $339,850 in October to $342,993 in November an increase of .9 per cent.

The Bureau received replies from 131 paper box factories which gave their employment in November of last year at 13,972 decreasing in the same month of this year to 13,479, a decrease of 3.5 per cent. The payrolls in these plants are almost identical in November last year and this year. In November last year the payrolls amounted to $283,093 and in November of this year to 283,091.

Waxed Paper Bulletin

The third and latest bulletin issued by the American Waxed Paper Association is one of exceptional value as well as of notable attractiveness. It is entitled "Waxed Wrappers to Protect, to Retain and to Preserve" and it tells in a convincing manner the story of the waxed wrapper from the manufacturer to the consumer. It indicates the ethical development in the industry for it shows the manufacturers' aim to raise the standard of their business. The bulletin is beautifully printed on olive stock with decorative borders, sprays of holly and a picture of various products put up in waxed wrappers. These bulletins are sent out to every customer of each member. They are already accomplishing real results and are but another indication of the enterprise of the association which fathers them.

Rising Sun Paper Mill Sold at Auction

[FROM OUR REGULAR CORRESPONDENT.]

RISING SUN, Md., January 5, 1925.—The paper mill at this place has been sold at auction to Edward Hulting Antram, of Camden, N. J., for a consideration of about $25,000. The property had been held in trust by J. Henry Baker, Trustee, of Baltimore, who sold through E. T. Newell & Company, auctioneers.

The property includes about 68 acres of land, with improvements, and has been out of operation for some time.

Howard Paper Co. Completes Ruling Department

[FROM OUR REGULAR CORRESPONDENT.]

URBANA, Ohio, January 5, 1925.—The Howard Paper Company has just completed the erection of a new brick addition to its factory, in which will be located its Ruling Department. This places the firm in an even better position to give good service to its customers on all kinds of mill ruling and also gives space for a large open stock room in the mill.

J. F. Carroll Leaves Oswegatchie Paper Co.

[FROM OUR REGULAR CORRESPONDENT.]

NATURAL DAM, N. Y., January 5, 1925.—John F. Carroll, who has been superintendent of Oswegatchie Paper Company, Inc., here for the past year, has resigned. After taking a short rest he will be open for another engagement. As Mr. Carroll has had a very wide and successful experience in paper manufacture it is expected that his services will be in demand.

Malone Paper Co. Completes Bridge

[FROM OUR REGULAR CORRESPONDENT.]

MALONE, N. Y., January 5, 1925.—The Malone Paper Company has completed a steel bridge over the Salmon river at its mill north of Malone. The bridge is one hundred feet long and of standard railroad construction. It will bear locomotives of the heaviest type. The bridge is a connecting link in the private railroad spur of the company. It cost sixteen thousand dollars.

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CHEMICALS
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A Paper Coating of Superior Quality, Giving the Highest Finish to Your Sheet

PULP: Free Flowing, Extraordinarily Smooth, High Solid Content, Packed in Barrels.

DRY: A New Product of Equal Efficiency to Pulp, Packed in Bags, Thus Minimizing Labor in Handling and Loss from Freezing and Leakage.

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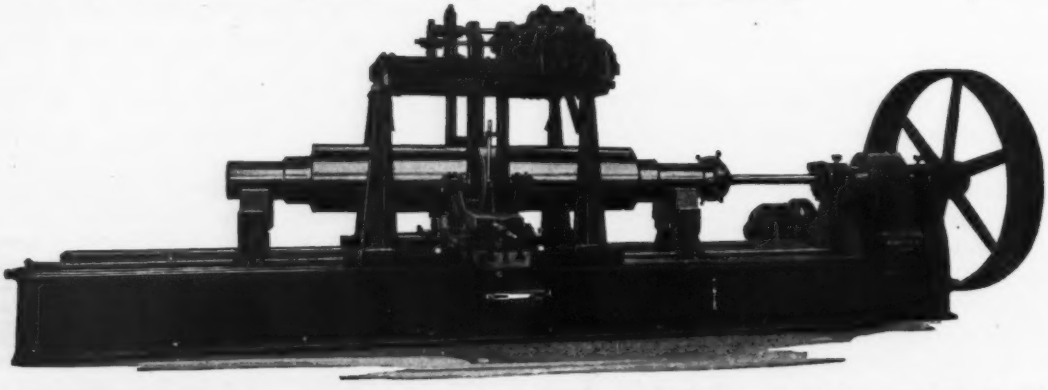

LOBDELL Calenders are equipped with Patent Electric Motor, Hydraulic or Ratchet Lift all operated from the floor.

LOBDELL Micrometer Calipers are handy and accurate.

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Section of the

Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Conducted by W.G. MacNAUGHTON, Secretary

PAPER TESTING AT THE FALL MEETING

At one of the sessions of the Fall Meeting held in Hotel Statler, Buffalo, N. Y., October 14 and 15, 1924, there was a discussion of paper tests and the conditions of atmospheric relative humidity at which they should be made. Frederick A. Curtis, chairman of the Paper Testing Committee presided.

CHAIRMAN CURTIS: At the meeting last April in New York there was considerable discussion of the effect of relative humidity upon the strength qualities of paper, and the Paper Testing Committee believed it very desirable to go into that matter still further during the current year. A sub-committee of the Paper Testing Committee was therefore formed to pay particular attention to that phase, and they are carrying on several investigations. The matter has become of more importance, possibly, at the present time, on account of the feeling among certain members of the Association that a lower relative humidity than 65 per cent, is more valuable in determining the strength qualities of paper. This belief is further increased by the action of the Government Printing Office a few year ago in definitely establishing an atmospheric condition of 50 per cent relative humidity at 70 to 75 degrees Fahr. temperature for all their testing. The Committee of this Association has taken the very definite attitude that it wants the facts, and to find out which is the better relative humidity. It believed that it is not advisable to recommend to the Association any change until more data is available. The Committee has no new data to present at this present meeting; the only thing that I can offer is the thought that we should have a relative humidity for paper testing which indicates the true value of the sheet. It has occurred to me that this may be a tempest in a teapot in that there are less than a dozen laboratories or mills with controlled humidity conditions, and the vast majority of paper is just passed along without any thought of its testing.

The thought that I want to present to you is for you to cooperate with the Committee in presenting data, take part in this discussion, and assist us in getting at the facts in this matter, so we can make a definite recommendation to the Association.

Paper in Use

SECRETARY MACNAUGHTON: I'd like to say something in addition to what Mr. Curtis has already said from my standpoint, which has been that of a maker of paper, in testing paper at the mill, and noticing how it is used. It has struck me, when paper is used it is under the ordinary conditions of humidity that prevail, and that the quality of the paper under those conditions is the logical one to determine, and not to vary its quality, perhaps, by various relative humidity conditions during the test.

When we consider how paper is used, I think we must consider its converting use, as the final product. In the case of book paper, for example, its use so far as the paper maker or the paper tester is concerned, is the production of books. The use of wrapping paper or bag paper, its use is not entirely when it is filled with some material and being carried from a store or a factory, but in the bag factory or in the storehouse. In the case of jute paper, that is a somewhat different matter where it is made into flour sacks or cement sacks, because in that class of paper the final use is really the determining point. But if the paper is tested while it is being made into bags, into boxes, or into books, it is under those conditions, that it more nearly represents the conditions it has to stand.

Another point to my mind that should be considered, too, before a decision is made, is the matter of whether it is possible or not for a condition of relative humidity of 65 per cent, which has been the laboratory practice ever since paper testing was done, and I believe in Europe also, to be maintained in the work rooms while the paper is being converted. A number of those present, I thing, can give some clear information on that point. Personally, I would be very doubtful if, in the Northern part of the United States and Canada, it were possible to maintain 65 per cent relative humidity during the winter months with any comfort or feasibility.

CHAIRMAN CURTIS: We suggest, Miss Kiely, that you discuss this matter a little; we'd like very much to get any comments you have.

HELEN U. KIELY: I haven't any more to say than I said last April. Since that time we have been doing our testing at both 50 and 65 relative humidity. We have one laboratory equipped to test paper at 50 and one at 65 per cent. The numerical results we obtain are not identical, but the grading of the paper would be the same. A paper that was, for instance, No. 1 at 65 per cent would test No. 1 at 50 per cent. The greatest variation in tests, of course, is on the folding machine, and this, I think, is what the Government Printing Office is using as their standard for grading and is a basis for changing to 50 per cent. As I said before, the folding tester is most sensitive to the relative humidity changes, and Mr. Reed finds in testing at 50 per cent the folding test gives him the best results.

We agree with him on that. We do find a variation, but the grading would be the same whether we tested it at 50 per cent or 65 per cent. With the tensile and tearing tester, there doesn't seem to be so much difference in the tests; the folding test is the one that seems to give the biggest variation.

If we were to change, I personally think it would be better to go lower than 50 per cent and do away with all atmospheric changes

running the tests at the temperature it would be in most of the converting offices and mills, which would be around 40 per cent, and it would be impossible, I suppose, to maintain a relative humidity of 40 per cent. I'd rather have the testing done at the lowest humidity where the change is less noticeable, at 40 per cent, or the highest say 65 per cent.

H. L. PECKHAM: I should like to hear some remarks from those who are opposed to the maintenance of 65 per cent relative humidity as a standard testing condition. We have maintained 65 per cent relative humidity in our laboratory since its inception, as it was the standard adopted by the U. S. Bureau of Standards, TAPPI and all foreign government laboratories.

Mr. MacNaughton stated that the converting of paper must be taken into consideration and in so doing we must consider printing. At what relative humidity does paper most satisfactorily run over the presses? From observation, it is my belief that the majority of printers, who are studying this proposition, are of the opinion that paper runs better over the presses at a high relative humidity than at a low relative humidity. The high moisture content of the air eliminates static and curling to a great extent, and other factors of this character.

Also, I believe that an investigation should be started to obtain facts and data concerning the actual atmospheric condition at which paper is converted and used. This data should be collected from all sections of the country covering a period of not less than one year, and the results summarized, together with opinions from printers and converters as to what relative humidity proves most satisfactory.

I should like to hear something on the side of the 50 per cent relative humidity, and I might suggest that there are possibly some members present who are not entirely familiar with the discussion. I have some articles here by E. O. Reed, which relate to the subject under consideration; a reading of the high spots would perhaps bring out more discussion.

CHAIRMAN CURTIS: Thank you, Mr. Peckham, I think that is a good point.

As a result of a meeting in New York, the Sub-committee of the Paper Testing Committee last August prepared a short paper on this subject which came out in the trade journals. I had assumed that you had all seen this, as Mr. MacNaughton kindly sent it to the membership of the Association. I don't know as it is necessary to go into all the comments in this paper, the point being, however, that in making a survey of the relative productions of the various grades, it seemed that this subject had to do with news print, book paper, board, wrapping, and fine papers, and that those must all be considered in connection with this subject.

On fine papers, the greatest emphasis is put upon folding and tearing and bursting strength, and yet, the percentage of this grade over a period of four years is 5.14 per cent of the whole production of paper in this country. Of that 5.14 per cent, probably less than one-third is glue sized rag paper, which means that for about 2 per cent of the entire production 50 per cent relative humidity is perhaps more desirable. It seems incongruous to change our whole system of paper testing for 2 per cent of the total production of paper in this country.

PAPER TRADE JOURNAL, Oct. 9, 1924, Mr. E. O. Reed, of the Government Printing Office, came out with an article which you have all probably seen, taking exception to some of the statements in this paper, and recommending adoption of 50 per cent relative humidity, bringing out the point that I had taken the attitude that the conversion of paper was more important than its use.

Actual usage of a sheet of paper, except in the case of blue print papers, perhaps, where you constantly fold them back and forward as you use them, seems to me is not always the thing to be considered. Book paper, after it is made into a book, doesn't get very much wear and tear, and book paper is bought by the printer on a very competitive basis. He has to get something cheap, and the paper has to be just strong enough to go through the press and withstand the folding and bending.

There is another phase of this subject which hasn't yet been brought out, and that is the relative cost of installing and operating a laboratory with constant atmospheric conditions. Mr. MacNaughton has kindly consented to assist the Committee in getting that data, and I am going to call on A. B. Clark, of the J. O. Ross Engineering Corporation, for thoughts along that line.

A. B. CLARK: If some one will just tell me what they have for the conditioning of the paper at the present time, what they have in the way of apparatus—

CHAIRMAN CURTIS: Anything from a steam jet in an attempt to put moisture in the room to elaborate apparatus such as the Bureau of Standards has, with elaborate refrigerating apparatus to dehumidify the air in the laboratory.

A. B. CLARK: It simply means if you test at 65 per cent r.h., the chances are, you will have to do nothing but humidify the air in the room. When you get to 50 per cent, certain times of the year, you will have to dehumidify the air, and if you try to get down to 40 per cent, during quite a portion of the year you will require dehumidifying apparatus which would mean considerable expense.

As long as you only need to humidify, it doesn't mean anything very elaborate in the way of apparatus, but once you start to dehumidify, then you begin to run into money.

SECRETARY MACNAUGHTON: I'd like to have Mr. Clark expand his remarks somewhat on what the results would be if, in paper manufacturing operation and conversion, a condition of 65 per cent relative humidity were maintained.

A. B. CLARK: We have done very little of that work. There are, I think, 3 installations in lithographic work that have been made, not by our Company. It means usually in the winter they have to add humidity, and in the summer they have to dehumidify. I think the American Lithograph Company has a large installation, and it is a very elaborate and a very costly system. So far a large number of lithograph companies have gone into it, but they usually just find out what the price will be, and then they quit.

R. W. HOVEY: That would vary altogether with the press room. In the modern press room there are ideal conditions. I should say, humidity would run fairly low and constant, except in certain periods of the summer. In the older press rooms, you have very bad conditions, water running around, and you have very high humidity. I don't think you can establish any ideal humidity at all from actual operating conditions in the press rooms. There must be an ideal condition, however.

H. L. PECKHAM: A little information along the line of apparatus. We do not have the dehumidifying apparatus, so that two months during the year it is practically impossible to control humidity conditions in the testing room at 65 per cent r.h. At times it is above 65 per cent, running as high as 80 or 90 per cent.

Mr. Reed has stated that it is possible to build a commercial humidifying and dehumidifying apparatus for $1,500. I made a visit to the Government Printing Office Testing Section and found this to be correct, but observed that refrigerated water was available which was not included in the estimated cost. If we were to equip our apparatus with refrigeration plant to maintain 50 per cent or even 65 per cent relative humidity throughout the entire year, it would cost approximately $5,000 additional.

In Lithographic Work

G. C. VAN VECHTEN: We, the Stecher Lithographic Company, are materially concerned with the subject of humidity, of course, in the expansion of paper fibers. We find it is necessary, to get the best quality in our production, to dehumidify as well as humidify, but the period of time is so short where we require dehumidification, that it doesn't really warrant the investment for equipment. In other words, from experience, there is no way to really measure the extent that we should go to in an investment for this apparatus.

In regard to the best percentage of relative humidity for printing,

that would depend on whether you refer to printing or lithography. You understand in lithographing, the paper is subject to a dampening process in proportion to the number of colors that are put upon the sheet. Therefore, the paper is subjected to additional moisture to that which it contains when it is received from the mill.

It is almost impossible to maintain a press room condition of 65 per cent relative humidity, particularly in the winter months of the year, that is, taking into consideration the welfare of the people that are working in the room. The reason for that is the tremendous amount of condensation that takes place, and the type of the building affects materially the per cent of humidity for best results.

In other words, the Company I am connected with has a press room of saw-tooth construction, and we have quite a little damage to stock from condensation dripping from the skylights and the windows, which is a factor to be considered in percentage of humidity maintained.

In the winter time the management in charge of the press room prefer to have humidity around 35 per cent; in fact, they seem to think that is the best condition for printing. While the engineering department does not agree with them, we at times cannot help ourselves, but it seems to me as though a percentage of relative humidity should be maintained somewhat consistent with the mean percentage of humidity that exists in relation to the atmospheric conditions outside.

I have records for nearly a year as to the percentage of humidity maintained in our press room; I wouldn't be surprised if the average would run around 45 per cent.

Moisture Content of Paper

CHAIRMAN CURTIS: There is another angle of the question which should be considered. We really don't care what the humidity is in the air, what we are interested in is the amount of moisture the paper has taken up, as that is primarily the factor to consider.

I am going to call on Mr. Hovey in regard to news print moisture content.

R. W. HOVEY: The only way we are very much interested in moisture content of the sheet and its relation to relative humidity is in the press room testing for basis weight. We have had two or three cases in the past year and a half on testing of basis weight. In one case we made a very thorough investigation, and we worked out the relation for our conditions at the mill, and in the warehouse, and in the press room. I haven't it here, but we were able to establish pretty conclusively that the basis weight variation as tested in the office of the press room as compared to the basis weight at the mill, was due entirely to a difference in relative humidity at the warehouse and the mill.

CHAIRMAN CURTIS: It is true that the publishers desire the higher moisture content for better working conditions in news?

R. W. HOVEY: That varies altogether with the publisher. One publisher is satisfied with 6 per cent moisture in his paper, another man wants 10 if he can get it. I can't say which is the best moisture content. Each publisher has his own ideas.

CHAIRMAN CURTIS: What is your idea as to the average conditions in the news print press room as to relative humidity? Is it a high humidity?

SECRETARY MACNAUGHTON: Last February the news print manufacturers were invited to visit the new *New York Tribune* press rooms, and I went along and was told that a constant humidity condition was arranged for to be maintained at 45 per cent relative humidity, the warehouse as well as the press room, and the business manager said that since they had gotten into the new building, the breaks on the presses had been reduced 15 per cent, which he attributed to the constant humidity conditions, indicating the tendency of newspaper publishers to maintain a constant humidity regardless of what it is. I understand, too, that the *Tribune* requires 7 or 7½ per cent moisture content, or there is desired, more particularly, of course, a uniform moisture content in order that irregularities might be eliminated.

CHAIRMAN CURTIS: Mr. Kellogg, have you any comments along this line?

R. S. KELLOGG: Nothing more than Mr. Hovey gave, I think, because there is all that range he mentioned.

The *New York Tribune*, I presume, has the most advanced plant in the country in that respect. It is very new, and it was designed especially to accomplish these things, and I was told again this week that while they didn't have a great deal of very exact data, they were sure it had greatly reduced the breaks in the press room, and if they had to build the thing over again they would do what they did this time.

So far as the mills are concerned, there is the range Mr. Hovey mentioned in the moisture content of the paper they put out. There are some mills today running 10 per cent moisture in paper and doing it because the user of the paper wants it that way. So far as they can do it that way, it makes a pretty good market for water, I should say.

CHAIRMAN CURTIS: How does the *Tribune* maintain such a low relative humidity during the summer?

R. S. KELLOGG: I haven't looked into the exact machinery or equipment they use.

SECRETARY MACNAUGHTON: In the winter time when we were there, they were really adding humidity, because in winter time, the relative humidity would naturally be down as low as 15 per cent. In summer I am doubtful as to whether the 45 per cent would be maintained. I am inclined to think it would be more the normal humidity of the atmosphere in New York City.

R. S. KELLOGG: It would be very easy to get the dope on this if anybody wanted it.

CHAIRMAN CURTIS: I think that is a very interesting thought. I think most manufacturers usually have a little trouble with paper coming right off the machine, but after it is seasoned it comes up in test.

G. D. BEARCE: In that connection, news print mills have practiced sweating the last drier and sometimes the spring roll, also and by this sweating action they not only return a little more surface moisture to the sheet, but it may have some effect on their pop test. They found it does give them a better finish if they sweat the last drier.

CHAIRMAN CURTIS: Mr. Traquair, will you speak on book papers?

JOHN TRAQUAIR: I am afraid this question has not had the attention it deserves. We run our papers around 5 per cent moisture and try to keep as closely as possible to that moisture content. We realize that with a higher moisture content the paper is more flexible. However, once the paper is printed and goes into a magazine, we are through with it. Not only are we through with it, but I think everybody is. It has fulfilled its purpose.

I would like to remind the committee that in dealing with book paper, the moisture content of the paper has to be regulated to give the best results on supercalendering. If the paper is a little damp it will blacken, and if too dry, the finish will be low.

ALLAN ABRAMS: Mr. Chairman, our experience on tests of this kind has been quite the reverse of this, but to be sure our conditions are different. We have a water box which, of course, adds moisture to the sheet at the very last. We have found in general that the Mullen test will drop 2 to 3 points in a period of from 1 to 6 hours after the sheet leaves the machines.

It is not my idea to divert attention from the subject on hand, but I would like to mention again a matter that the Association had discussed for years and should consider very seriously at this time. That is the Mullen test itself. Our experience with this test indicates that, from the practical standpoint of the mill man, it is very erratic; and this apparently is true no matter how carefully the instrument is handled.

The superintendent tests his paper as it leaves the machine and obtains a certain Mullen test. He then sends it to the laboratory in cans, to maintain the moisture, but 6 or 12 hours later may find that rolls which he has already shipped are running below test.

I believe that the Association should not lay too much stress on a difference of 5 or 10 per cent relative humidity in testing and at the same time neglect development work toward an improvement in the Mullen test or the substitution of some test which is more reliable.

The Government Laboratories

CHAIRMAN CURTIS: Any comments on that suggestion? I want to call on E. P. Cameron, of the Forest Products Laboratories of Canada.

E. P. CAMERON: Mr. Chairman, we have not done very much work on the effect of humidity on paper testing. We have done a small amount of work however on the effect of humidity on test sheets. A series of tests was carried out, drying our sheets under different conditions in an electric oven to bone dryness and then allowing them to regain their natural moisture content. A check series dried in air was also carried out and we found in all cases that the sheets we dried past the natural moisture content would never regain that moisture content, no matter how long they were left exposed in the air or kept under 65 per cent humidity in a desicator.

That is about all the work we have done. There is one point which struck me in the discussion of the New York Tribune office. I don't know very much about printing, but I should imagine that a printing press is a delicate piece of machinery, and would require careful tuning up to get good printing from the installation. It seemed to me as being just possible that the increase in the efficiency of the machine in that case might be due, more to the constant state of the paper passing through the press, than to the actual relative humidity of 45 per cent.

CHAIRMAN CURTIS: I am going to call on Dr. Rue, of the Forest Products Laboratory, Madison.

J. D. RUE: We have done practically no work on effect of operating conditions on paper testing since I have been connected with the laboratory. We aim to maintain conditions as accurately as possible on our routine testing. We are operating at 65 per cent relative humidity without refrigeration. That means during the winter time, late fall, and early spring, we are maintaining that fairly constant with a temperature of 70 degrees Fahr. During the summer time when the water is quite warm, we cannot cool sufficiently to maintain a relative humidity of 65 per cent without running to a temperature around 80 degrees, or sometimes above, consequently we maintain the relative humidity at 65 per cent and run the temperature up if necessary, this causes bad working conditions, of course, but the amount of testing we have been doing has not been large enough to interfere seriously.

Mr. Wells has just arrived, perhaps he knows more of that phase of the work than I do.

CHAIRMAN CURTIS: Mr. Wells, at what relative humidity do you think you get the best results as to the quality of paper, 50 or 65 per cent or more?

S. D. WELLS: I really think 65 per cent; the paper is better than at 50, taking all the physical properties of the paper into account.

CHAIRMAN CURTIS: You mean give higher strength values? Does that indicate the value of the sheet in connection with its use?

S. D. WELLS: Well, it is with wrapping paper where it is subjected to tear or wear at 65 per cent. You test the paper under more favorable conditions at that figure than 50 per cent, taking all factors into consideration. For wear and tear, even higher humidities than 65 per cent are more favorable. It is also much easier for us to maintain 65 per cent. Of course, with artificial refrigeration we could maintain a lower humidity but we haven't that, and it would be quite an expensive installation for us to consider.

CHAIRMAN CURTIS: I am going to call on Mr. Bergholtz, of the American Telephone & Telegraph Company. Mr. Bergholtz has had experience using paper.

Interpretation of the Tests

E. A. BERGHOLTZ: In a way I am rather glad you have called on me because I believe I can throw a little light on some other angles of the question of relative humidity. We (American Telegraph and Telephone Company), have held aloof up to the present from taking a definite stand with regard to a particular humidity because neither paper mills nor our own laboratory maintains special humidity control. We do establish the humidity at the time of testing and make an approximate allowance for it in considering the value of test results. Our position we deem sound inasmuch as only two mills in this country control humidity.

The reason for this condition we believe to be due to the varying opinions as to value of the folding test as a determinant of the quality of paper. If this kind of test is to be considered indispensable—then humidity control is likewise indispensable. This interdependence and factors from which the worth of the folding test may be evaluated are well set forth in the "Report of Schopper Folding Machines," Helen U. Kiely—Paper Trade Journal, Vol. 76, p. 45—May 10, 1923. The humidity must be exactly controlled, a tolerance of 30 per cent, in the cross direction must be allowed for differences in results from various machines even under such control. A machine will not check itself within 10 per cent. It was these three facts combined with comparatively large tolerances recommended by F. P. Veitch, Bureau of Chemistry, which deters us, for the present, from further consideration of the installing of a folding tester.

The framework of this whole reasoning is built, as mentioned above, on the supposition that a folding test is of vital importance. However, we are not at all convinced that it is invaluable. Much more reliance it would seem may be placed on tests whose mechanism is more easily understood. In other words it is easier to explain what happens to a sample of paper, when it is subjected to tearing and tensile force than to the folding test. And it can hardly be gainsaid that knowledge of how a test affects paper is important in determination of the relation of that test to the usage to which the paper is to be subjected.

It is very difficult if not impossible to draw from experimental data alone correct conclusions as to the meaning of tests. They are of value, it is true but only inasmuch as they support a theoretical structure. In other words, a study of the experimental data alone does not give proper information as to the value and character of different tests.—It is necessary to consider the kind of force applied in each case.

There are two ways in which paper may be tested for strength,—the strength of the fibers themselves and the strength they obtain from being matted together being bound by size. In order to test these two powers of resistance two kinds of force may be applied, one that is perpendicular to the plane of the paper and hence perpendicular to all the fibers in it, and another in the same plane with the paper, being parallel to some fibers, perpendicular to others, and forming angles of varying degrees with still others.

The predominating effect of the first force is a snapping off of the fibers while that of the second is a pulling apart. The difference in effect of these tests is quite apparent under the microscope.

That the tensile and tearing tests show entirely different qualities in paper is further indicated by the data contained in an article by Houston, Carson and Kirkwood presented at the Annual Meeting of TAPPI., 1923. Tensile sterngth in general is weakened by an increase in relative humidity—while the tearing test is strengthened by it. In other words moisture softens the size and allows the fibers to slip over one another—at the same time it makes the fibers less brittle and apparently in some way increases their strength.

From this it would seem that the tearing and tensile tests show two different properties and do not estimate the same kind of resis-

tance that apparently happens when the Mullen and tensile strength tests are used. In this connection it is appropriate to remark that it is possible that the tearing test and folding test bear on the same property since they are both similarly affected by humidity though in different degrees. However, the forces applied in the folding test have not as far as I know been analyzed.

In this discussion of the nature and effects of the various tests, I may have seemed to have digressed unnecessarily but this has been essential as the following discussion will show.

It is common knowledge that the increase or decrease in any one kind of strength in paper is some function of the humidity. If the change in humidity does not too greatly affect the kind of strength to be measured, the value of that strength at any particular humidity, for example 45 per cent., can be calculated to what it would actually have been had the test been made at another humidity, for example 65 per cent. In the article by Houston, Carson and Kirkwood mentioned above, the maximum effect on tensile and Mullen strength, for variations from 65 per cent. relative humidity, is a loss or gain of 10 to 15 per cent.—but little more than the tolerance required for difference in machines. For the tearing test, the maximum tolerance for relative humidity is approximately 30 per cent. while the allowance to be made for difference between machines is approximately 5 per cent. This 30 per cent, be it noted, is the tolerance allowed for difference in folding machines, when humidity is exactly controlled and is the same. The maximum effect of humidity may be 90 per cent. of the actual test result.

Now if paper can be accurately judged without considering the folding test, that is, by the use of tensile and tearing tests alone, it is quite possible, even probable, that an approximate allowance may be made for difference in humidity as the following example will indicate.

Suppose I make a tearing test on a sample of paper at 45 per cent relative humidity and then try to make a correction to bring the result up to what it would have been, had the test been made at 65 per cent relative humidity, by adding 25 per cent to the original test results. Of course it is to be supposed that this 25 per cent has been obtained by comparing the test results from many samples under both humidities. Now the corrected result even though it had its own error still, say 10 per cent, certainly cannot be as far wrong as the uncorrected results.

If someone would authoritatively settle by experiment whether tearing and tensile strength tests made at one relative humidity could be corrected to another humidity with an accuracy sufficient for practical purposes, much time and money could be saved. If such a calculation is feasible then the question of standard humidity conditions becomes almost purely academic. All this of course, as I said before, presumes that the folding test is not indispensable.

But proof by experimental data with their probable errors form the only convincing method for establishing this principle as the following example will indicate. An interesting article "Can Bond Papers be Standardized" by William Bond Wheelwright was published in the PAPER TRADE JOURNAL, Vol. 79, p. 38—July 3, 1924.

The value of these results however, is considerably lessened because there is no indication of their accuracy. Had the probable error been calculated and attached to the respective data, as is often done in discussing physical tests, more accurate interpretations could be realized from the results and conviction more easily established. One particularly valuable feature of the probable error is its use in determining whether for instance a low single test is due to poor quality paper or an accidental flaw.

In considering then the question of relative humidity, it is our opinion that if the folding test is vital in the judgment of quality in paper then some standard must be set up. However, if paper can be accurately judged without it then it ought to be settled by experimental data whether the tests results obtained at one humidity can be corrected so that they will agree approximately with what would have been obtained experimentally at another humidity. It is obvious that this question is most important from the standpoint of accurate judgment of paper at a minimum of time and money.

CHAIRMAN CURTIS: Thank you, Mr. Bergholtz. There are several very good thoughts there. Paper testing has been sort of a hit and miss proposition, and I do feel we ought to try to get on a little sounder basis, and Mr. Bergholtz has been one of the pioneers in using the idea of "probable error" in connection with paper testing data.

Along that line, I would certainly like somebody to volunteer or at least to cooperate with the Committee and present a paper on the interpretation of paper test data, the thing we have been needing for five years, and I hope somebody will come across and give us something good. We only have about ten minutes left, and I am just going to leave the meeting open to anybody to talk.

G. D. BEARCE: Mr. Chairman, I'd like to ask Mr. Bergholz what percentage of moisture they like to have in that paper, and whether it is the relative humidity in the room or printing establishment they like to have or do have?

E. A. BERGHOLTZ: We don't ask for any special humidity. You have to realize that our Directories are printed all over the country, not by any one firm, because this is not economical. Printers in different parts of the United States do not maintain any humidity. Humidity in the South differs from that in the North, so as long as we can get a paper of sufficient strength to pass over the presses.

As far as fine papers are concerned, we haven't any ideas on that at all. I hope that the attitude we are taking hasn't been misunderstood. We are relying on the manufacturers to tell us what we ought to do, because we feel they know more about it than we do, and we haven't established firmly any humidity even in our fine papers, because we haven't seen any need for it. We don't feel we know any more about it than anybody else.

G. D. BEARCE: What about moisture in the paper? I don't know the direct connection, but speaking of catalogs, have you had any established relations between the moisture and the strength and ability to run over presses?

E. A. BERGHOLTZ: No, we haven't done that at all. I might say in this connection, that another reason why we have no knowledge of this is because a problem has to be brought up to us before we can do it. If there is no complaint about it, we won't tackle it, and since the printers haven't complained at all about the tensile strength we haven't done anything about it. Humidity has come up in one or two places regarding paper expansion and things like that, but we haven't tried to settle any relation between humidity and tension.

F. C. CLARK: About the folding test, it takes the paper and bends it back and forth and actually wears down the fibers until it comes apart. It is a wearing down process, the folding back and forth of paper under an even tension on either side.

E. A. BERGHOLTZ: That doesn't quite answer my question. My question is this: I believe, first of all, that the Mullen and tensile strength are in a certain degree proportional. When I say that it pulls the fibers apart, I don't mean to say it doesn't break any or it pulls them all apart. I want to say merely this, that the separation of fibers is the predominant effect in tensile tests and in the tearing test the breaking of the fibers is predominantly the effect. Both actions take place; it is merely the changing the relation. We figure in a tear test you will apply force perpendicularly. We believe the tensile force is a parallel force. But what kind of a force do you apply when you fold paper? That is the one thing that we can't find out.

R. W. HOVEY: I wonder if anybody ever ran moving pictures of tensile test? We have, and you will find that fibres do break, pull apart, uncurl and snap out, in fact, almost anything happens in a break.

CHAIRMAN CURTIS: I think that certainly would be a most interesting investigation. Have you the data available for the Committee?

R. W. HOVEY: I haven't the film here, but it could be studied?

F. C. CLARK: You are all paper makers, and you know definitely that paper varies at different points, and you merely test a line, on the test sheet test, and if the paper isn't uniform it can very easily fold 100 one place and 3,000 the next time on the same sheet. There are some papers, such as imitation papers of one kind or another, where you will have a variation in the folding test in the same sheet from probably 5 or 6 double folds to 5,000 or 6,000, and that is one of the great advantages of the folding tester. That is the main point that really is in favor of the folding test. It shows uniformity of the sheet.

B. S. SUMMERS: Some classes of paper aren't adaptable.

F. C. CLARK: Only the very strong sheets will fold 10,000 double folds, and it isn't a practicable test for you can't sit around and watch one of those machines work five, six, and ten hours. That is the one difficulty, in testing very strong papers. But Dennison and some of the other manufacturers are applying double folds tests, and then applying the tensile test, giving folding [illegible]

ASBESTOS DRIER FELTS

BY RUDOLPH HUECKLER

One of the most important items of cost in the operation of any paper machine is the item of drier felts and since all mill executives are continually looking for an opportunity to cut the cost of production the following comments on drier felts may prove of interest.

The requirements of a good drier felt are that it have sufficient tensile strength to withstand the strain imposed upon it when in operation, it shall have a smooth surface and it shall consist of a material which absorbs the moisture from the wet paper and at the same time should also have the property of porosity so that the water vapor given up by the paper in the process of drying may readily pass through the felt.

The most common drier felts now in use are made from wool or cotton, both of which have their disadvantages. The woolen felt has a good smooth surface which presses the paper tightly against the driers without marking it, however woolen drier felts lack porosity and for this reason the water vapor does not readily pass through and in time the continual saturation of the felt causes it to rot.

The cotton drier felt is more porous than the woolen felt, however it does not have as smooth a surface and as a result the felt marks often show on the paper. Further, both wool and cotton are affected by the heat of the driers and being animal and vegetable fibers are in time burned and then lose their usefulness.

Inasmuch as the life of running time of the drier felt is of great economical importance, considerable research work has been done on the problem of finding a more suitable material for felts with the result that asbestos has been found very well adapted to this use. Asbestos, being a mineral, is incombustible and is not affected by heat, its fibers are flexible and adapted to the weaving process, however asbestos alone lacks the necessary tensile strength. During the course of investigation Von Asten & Co., Eupen, Belgium, whose American representatives are H. N. Hill & Co., Philadelphia, discovered that a combination of asbestos and cotton when properly fabricated make an ideal drier felt. The drier side of the felt is composed of smoothly woven asbestos fibers which are interwoven with an outer cotton web. The asbestos ply successfully resists the heat from the driers while the cotton backing furnishes the necessary tensile strength. The felt as a whole proves very flexible and for this reason hugs the driers snugly and leaves no felt marks on the paper.

An important property of these asbestos felts is their capillary action resulting from the special weave of the asbestos fibers. The advantage of this capillary action can easily be detected by allowing a drop of water to come into contact with each, a woolen, cotton and asbestos felt. In the case of the asbestos felt the water will immediately be absorbed while cotton or woolen felts will take considerable time for the same result.

A seeming paradox is the fact that although water is readily absorbed by the asbestos, it is easily given off. This, of course, is due to the water not entering the asbestos fibers themselves, being held by attraction in the meshes of the weave. The porous cotton backing on these felts facilitates the rapid evaporation of the water.

The evaporation of water in the asbestos drier felt is further facilitated by the property of the asbestos of storing up surplus heat as the felt travels over the driers. This surplus heat is later used in evaporating the water from the felt after it has left the driers. Due to this property a felt drier is often superfluous.

In addition to this feature the useful life of an asbestos drier felt is roughly twice that of the woolen felt and about three times the life of the cotton felt. The above has been proven in different mills in United States, Finland, Germany and Sweden. As a direct result of the longer life of the asbestos drier felt the cost per ton of paper for felt equipment is considerably reduced.

In conclusion the rapid evaporation of water from the asbestos drier felt due to the many unique properties described above makes possible the speeding up of the paper machine which results in more economical production.

Forest Research Activities

Eighth regional Forest Experiment Stations and the Forest Products Laboratory are now in operation, according to the annual report made by the Chief of the Forest Service to the Secretary of Agriculture. In addition, a new Forest Experiment Station is being established in the Pacific Northwest. A station for California is urged by Chief Forester Greeley in his report.

The eight Experiment Stations now in operation are located at New Orleans, La.; Missoula, Mont.; Asheville, N. C.; Amherst, Mass.; St. Paul, Minn.; Portland, Ore.; Flagstaff, Ariz.; Colorado Springs, Colo.

The Forest Products Laboratory, located at Madison, Wis., made the study of wood waste prevention one of its chief activities, the report states. This resulted in a national conference, called by the late Henry C. Wallace, Secretary of Agriculture, which was attended by about 400 representatives of timber producing, manufacturing, and consuming industries.

The laboratory also continued its study of the dimension-stock requirements of various industries with a view to reducing the numbers of different sizes needed in commerce, thus simplifying the problem of making and buying dimension stock.

Much progress was also made, according to the report, in important phases of the preservative treatment of timber, in paper and pulp research, and in investigating kiln-drying and air-seasoning methods. This latter activity involved elaborate tests of airplane woods for the United States Navy and resulted in many practical advantages. In referring to the work of the Forest Experiment Stations the report states:

"Already it has become evident that these stations are certain to be of prime importance in hastening the general practice of forestry within their several regions. Their influence is partly due to the fact that they become centers about which gather the interest and activities favorable to progress in forestry. Thus they perform a function of leadership. They are valuable sources of information and advice, both to public agencies and to private owners interested in forestry, as well as instrumentalities for correlating and directing investigative undertakings along the most fruitful lines. They will undoubtedly be of the utmost value in helping the States to formulate policies of forestry, as well as powerful influences making for its private practice."

CAROÁ FIBER AS A PAPERMAKING MATERIAL*

By Merle B. Shaw, Associate Technologist, Raymond R. Rumsey, Assistant Papermaker, Bureau of Standards.

I. INTRODUCTION

There is at the present time a scarcity of rag and rope stock for paper making. The purpose of the investigation herein reported was to show the possibilities of caroá fiber for use with or substitution for these materials in paper production.

The caroá plant offers little possibility of use in competition with wood as a source of papermaking fibers but laboratory tests show it to be well adapted for papers requiring such special qualities as strength with light weight, durability, etc. The cost at which it is estimated quantities could be imported[1] would permit the use of caroá for papermaking purposes if desired. Before extensive supply of the fiber could be obtained, however, development of methods of production and preliminary treatment at the source might materially affect the present price. It is reported that previous to the extraction of the fiber, other materials (gum, oil, balsam, pitch, and acid), that may be of even greater value, can be extracted.

II. OCCURRENCE AND CHARACTERISTICS OF CAROÁ

1. General[2]

Caroá (*neoglaziovia variegata*), variously spelled carua, caroa, caroá, is native of eastern Brazil, being especially abundant in the valley of the St. Francis river. It grows under some what arid conditions at such altitudes as become rather cold in winter. Its thickness of growth and reproducibility after harvesting have made cultivation unnecessary for supplying the needs of the natives. If, however, extensive supply were required for use on a large commercial scale, production would doubtless become important. No information as to the possibilities of cultivating the plant has been obtained.

The leaf of the caroá plant is about 4 feet long and from 1½ to 2 inches wide, being slightly larger than the leaf of the pineapple which, in certain parts of the world, notably the Philippine Islands, is extensively used for the manufacture of textiles. By beating the leaf between stones the natives roughly extract the fiber which, after subsequent fermentation and washing, is used for coarse handmade twines, nets, fishing lines and rope (used for domestic purposes, especially tying loads on pack animals and binding skins into bales for exportation). Caroá is rather rough and unattractive for cordage as compared with abaca, sisal and other hard fibers now used for this purpose. It is not recommended for the manufacture of cord because of the fact that the fibers are hard and do not clean easily. The pulpy substance which still remains after cleaning is susceptible to rapid fermentation and decomposition in the presence of moisture. There is, however, no organized caroá industry, the above-mentioned fiber production, carried on by farmers on a very small scale, being the only commercial use of the plant at present.

2. Description of Samples

Three different samples were tested. Each had received preliminary treatment before being submitted, the method of treatment and source being as follows:

A.—Shredded only; source, Caruarú, Pernambuco; obtained and forwarded by the American Consul, Pernambuco, Brazil.

B.—"——is the 'batido' (beaten) which is cut and beaten without immersion in water"; source, Bahia, Brazil; supplied by an American commercial house.[3]

P.—"——is the 'pubo' (fermented) which is obtained by soaking the cut stalks in water for a period of about 10 days, after which the gum is extracted"; source, Bahia, Brazil; supplied by an American commercial house.[3]

III. TESTING METHODS

1. Apparatus

The material was cooked in the rotary boiler shown in Fig. 1. This boiler has been found to give excellent results as regards laboratory scale pulping experiments and, therefore, the following details may be of interest. The length is 18 inches, diameter 8 inches and capacity 12.5 liters. It is driven by a ¼ horse power motor at a speed of 4 revolutions per minute, worm gears bringing about the speed, reduction. Heat is applied externally by gas burners. Two hand holes, opposite each other, in the center, permit removal of the cooked material with ease. A thermometer, graduated in 5 degree units from 50 to 400 degrees Fahrenheit and a pressure gage reading from 0 to 200 pounds are attached to the boiler.

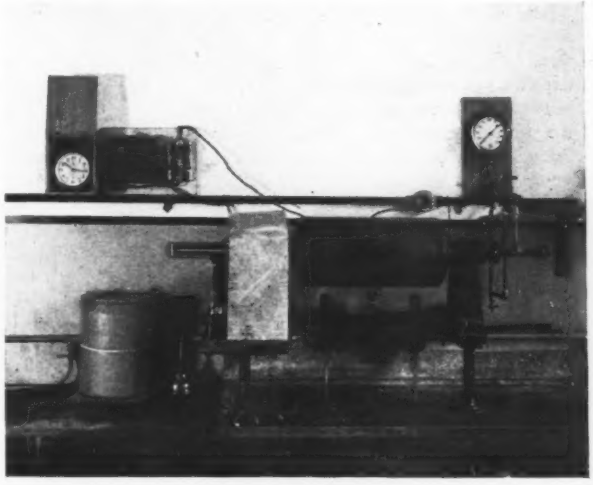

Fig. 1
Laboratory Rotary Boiler

In the preparation of the stock and its subsequent conversion into paper a ½-pound beater and a sheet mold were used. The sheet mold is fully described and illustrated in a previously published article[4] but the essential features of the general method, briefly stated, were as follows.

Wet pulp equivalent to 135 grams weight bone-dry, was diluted to a consistency of 1.75 per cent bone-dry pulp. The beating consisted of only brushing out the fiber until there were no lumps or knots. No attempt was made to obtain maximum strength of fibers. After the beating was completed the stock was emptied into a copper pail and diluted with water until the weight of stock and water was 10 kilograms (22 pounds), which weight gave a volume of approximately 10 liters. The diluted stock was thoroughly mixed and a sample of 450 cm^3 taken for each sheet. (A 450 cm^3 sample gives approximately a 60-pound sheet—25 by 40 inches, 500 sheets—the exact weight depending on the shrinkage of the sheet.) The 450 cm^3 sample was diluted still further, in a 1-gallon copper measuring dish, the final concentration being approximately 0.16 per cent. The stock diluted as above was then made into a sheet on the sheet mold.

*Published by permission of the Director of the Bureau of Standards of the U. S. Department of Commerce.

[1] Seven to ten cents per pound, f. o. b. New York, has been quoted for treated material.

[2] Acknowledgment for the botanical and economic information is due L. H. Dewey, Bureau of Plant Industry, Dept. of Agriculture, Washington, D. C., and the American Consul, Pernambuco, Brazil.

[3] Acknowledgment for materials and descriptive information is due Adolph Hirsch and Company, Inc., New York, N. Y.

[4] "Method of Making Uniform Fiber Sheets for Test Purposes," by Merle B. Shaw and George W. Bicking; Paper Trade Journal, Vol. 79, No. 21, pp. 51-53, Nov. 20, 1924.

TABLE 1—TEST DATA

Caroá fibre sample	Test number	Caustic soda added (on bone-dry basis), per cent	Caustic soda consumed, per cent	Yield of pulp, per cent	Bleach required, per cent	Physical tests on finished paper: Weight, 25x40—500, pounds	Bursting strength, points	Ratio bursting strength to weight 25x40—500, per cent	Tensile strength (1 inch width) Long[1] direction, pounds	Tensile strength (1 inch width) Short[1] direction, pounds	Elongation Long direction, per cent	Elongation Short direction, per cent	Tearing strength Long direction, grams	Tearing strength Short direction, grams
A.....	1	20.0	20.0	43.7	2	60.0	73.2	122.0	23.1	23.7	14.4	16.6	216.3	224.0
A.....	2	27.7	26.2	39.1	over 13	60.0	52.2	87.0	20.7	20.6	17.1	18.7	125.8	128.0
B.....	3	15.0	15.0	55.5	2	60.0	85.3	142.1	27.1	29.5	14.3	16.0	207.0	219.0
B.....	4	20.0	19.7	49.3	13	60.0	59.8	99.7	21.5	22.3	12.5	12.5	185.0	187.2
B.....	5	25.0	23.2	49.3	13	60.0	61.4	102.3	21.9	21.9	11.6	11.1	140.5	140.5
B.....	6[2]	25.0	23.5	45.1	13	60.0	64.3	90.5	19.6	19.5	14.6	14.7	126.2	126.2
P.....	7	10.0	10.0	67.0	2	60.0	64.4	107.3	21.5	21.9	10.9	10.5	226.0	219.4
P.....	8	15.0	15.0	61.2	2	60.0	63.9	106.5	24.1	23.3	9.4	8.8	209.0	213.0
P.....	9	20.0	19.4	60.0	13	60.0	59.5	99.1	23.4	23.4	9.8	9.5	140.7	146.2
P.....	10	21.9	20.4	59.7	13	60.0	54.8	91.3	20.1	19.9	9.4	9.6	126.2	125.1
P.....	11	25.0	21.0	55.3	10	60.0	52.1	86.8	19.5	20.5	10.4	10.8	111.5	116.2
P.....	11a[4]	...	...	...	....	60.0	50.3	83.3	19.0	19.7	9.8	10.4	112.8	109.5
Sulphite[5]..	...	...	...	...	....	60.0	23.3	38.8	9.8	9.8	3.4	3.8	65.8	67.2

NOTE—[1] Sample taken from sheet (as formed on the sheet mold) in direction indicated.
[2] Pulp remained unbleached even when amount of bleach added exceeded 16 per cent, therefore was regarded as commercially unbleachable.
[3] Sample B, test number 6, was cut only, not thrashed or dusted.
[4] Test 11a was from the same pulp as test 11 and was made as a check test.
[5] A test on sulphite pulp was included for comparative purposes.

2. Procedure

The caroá was cut into pieces about 1 inch in length, thrashed and dusted. Samples were taken for determination of moisture content. The material was then cooked with caustic soda in the small experimental rotary boiler (Fig. 1). A number of cooks were made keeping all conditions constant except the volume of caustic liquor, the percentage of caustic soda based on weight of material cooked being varied for each. The pulp was washed, bleached, beaten and made into sheets (on the sheet mold) in the usual way. The cooking constants were:

Weight of bone-dry material	908 grams
Concentration of caustic liquor (expressed as Na_2CO_3)	30 grams/liter
Causticity of cooking liquor	98 per cent
Cooking temperature	342 degrees F.
Cooking pressure	120 pounds
Time for raising temperature	1 hour
Time of cooking at temperature	4 hours
Time for cooling	½ hour

IV. TEST RESULTS

1. Losses in Cleaning

The loss of weight in the initial operations of cutting, thrashing, and dusting was: A, 3.5 per cent; B, 6.0 per cent; and P, 7.1 per cent.

2. Basis for Percentage

The values in the first four columns of percentage data in Table 1 are based on the weight of the bone-dry material after cutting, thrashing and dusting.

3. Tabular Data on Paper Made

The first part of Table 1 gives data on caustic added and consumed[5], yield of pulp and bleaching qualities. Under "Bleach required" is amount of bleach required, expressed in terms of 35 per cent bleaching powder, for bleaching to a good color. The values under "Physical tests on finished paper" have been converted for comparative purposes to a 60-pound weight basis.

4. Fiber Characteristics

Figures 2, 3, and 4 are photomicrographs[6] of caroá fiber, caroá and rag fibers, caroá and sulphite fibers, respectively. Fig. 2 shows the caroá fiber to be long, of small diameter, and cylindrical with pointed ends. These characteristics produce good felting of the fibers, and give compactness and strength to the resulting sheet. Figs. 3 and 4 show mixtures of caroá fiber with common papermaking fibers for comparative purposes. Table 2 gives dimensions[6] of caroá and other fibers.

TABLE 2—FIBER MEASUREMENTS

Fiber	Length, mm.	Diameter, mm.	Ratio of length to diameter
Cotton	20–50	0.012–0.037	1400:1
Flax	25–30	0.02 (Average)	1200:1
Manila hemp	6 (Average)	0.024 (Average)	250:1
Jute	2 (Average)	0.022 (Average)	90:1
Sulphite pulp	2.8 (Average)	0.033 (Average)	90:1
Caroá	4.0 (Average)	0.010 (Average)	400:1

5. Discussion of Results

The data of Table 1 show, as would be expected, the yield of pulp highest for the samples previously treated (purified) most; also, less caustic required to reduce these samples. The proportion of caustic used was a big factor in determining the yield as well as the bleaching properties of the resulting fiber.

Sample A, which had had no treatment (being in its original state except for shredding), contained a large amount of pithy material. It, therefore, required more caustic soda for reduction to a bleachable pulp than the treated samples and gave a proportionately lower yield. The yield for test No. 1, using 20 parts caustic, was 43.7 per cent and the pulp was unbleacheable. The paper made from it showed unusual strength (see Table 1). This was due, not only to the strength of the fibers themselves, but also to the cementing action of the unremoved pithy material. The pulp was very hard to wash and it beat to a "slow" stock in a very short time. There would be no objections to leaving a small amount of this pithy material in the stock when making bag or wrapping papers. In these, strength is required and this material would tend to bind the fibers and afford a certain amount of waterproofing. But to leave much would, it is believed, cause more trouble in washing and beating and affect the speed of production more than the advantage gained would warrant. Test No. 2 gave a cleaner fiber but the yield was low.

Sample B had received some preliminary treatment and therefore gave an increased yield. When 25 per cent caustic was used, the pulp bleached (with 13 per cent of bleach) to a very good white, and would be satisfactory for use in high grade papers such as writing, etc.

Sample P had lost much of its pithy material in the preliminary treatment. The yield of pulp was very good even when a stock was obtained that bleached easily. The bursting strength (and consequently the ratio of bursting strength to weight) decreased of course with the amount of caustic added but the weakest stock tested nearly a point per pound. The tensile strength showed practically no difference with increasing amounts of caustic, but the tearing strength dropped fifty per cent from the first (10 per cent caustic) to the last (25 per cent caustic). With the lower amounts

[5] For those not familiar with a suitable method for determining consumption of soda, the following formula ("Chemistry of Pulp and Paper Making," by Edwin Sutermeister, S. B., 1920, p. 110) is given and is a condensed statement of the procedure employed in the tests reported above.

"If the causticity of the liquor as added is known, the consumption of caustic sody may be calculated at any time from the black liquor analysis by means of the following formula:

$$X = C - \frac{B \times C}{A}$$

Where X = per cent NaOH used up, based on the bone-dry material,
A = per cent causticity at the start,
B = per cent causticity at time of sampling black liquor,
C = per cent NaOH added on bone-dry material."

[6] Photomicrographs and caroá fiber measurements were made by R. E. Lofton, Paper Section, Bureau of Standards; measurements of other fibers were taken from standard text books.

of caustic, pulps were obtained which made excellent paper well suited for bag or wrapping. With the higher amounts of caustic, the pulp obtained would compare favorably with rag stock.

The stock of test No. 11 washed easily and bleached to a white with 10 per cent of bleach. The pulp handled well in the beater, brushing out with very little trouble, and gave a very well formed sheet on the sheet mold. The physical test showed the finished paper to be very strong. A check beater test was made and the results are given in test No. 11a.

The yield of papermaking fiber from caroá compares very favorably with that for rags (60-85 per cent), hemp (50-65 per cent), or jute (50-65 per cent.)[7]. The bursting strength of paper made from caroá is about a point per pound (on 25 by 40-500 basis) which is the strength specified for the best papers made from rag or rope.

Although cotton and linen fibers have better ratio of length to diameter, they are much too long for papermaking and would have to be cut to about the same length as caroá fiber would, in which case the latter would have better felting quality because of its smaller diameter. (Range of size of caroá fiber was: diameter, 0.0046-0.0154 mm; length, 2.25-5.75 mm.)

It has been reported that materials similar to caroá fiber have been treated by a bacteriological process with the result that very little bleach is required to obtain from the treated product a white stock suitable for paper manufacture. If this process would work satisfactorily on caroá fiber, it might be advisable to apply it at the time of harvesting. The material would then be in such condition when shipped that paper could be made from it without any further treatment than that ordinarily given rag or rope stock. No data have been obtained as to the cost of the bacteriological method of treatment or the subsequent yield of papermaking fiber.

V. CONCLUSIONS

To be conclusive the results obtained need to be confirmed by paper machine tests but the laboratory tests indicate the following:

1. Caroá fiber is a very satisfactory papermaking material. When properly treated it can be used with or substituted for rag stock.

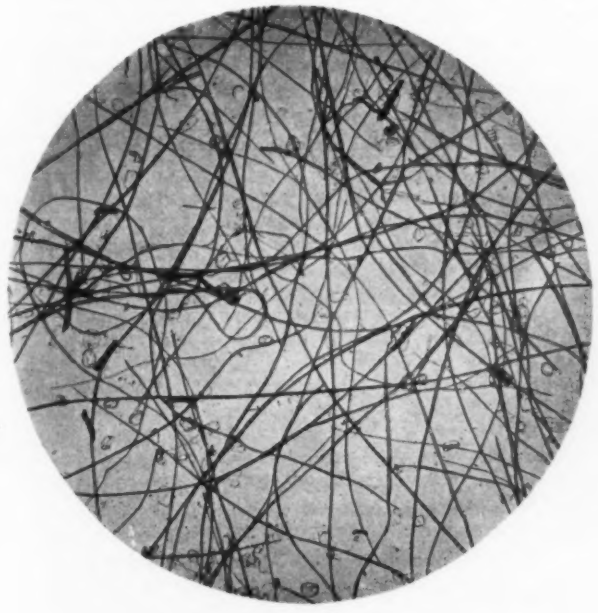

FIG. 2
Caroá Fiber

2. The preliminary treatment of the plant is a big factor in determining the characteristics of the paper made therefrom. Untreated specimens give lower yield, bleaching is not practical, but the paper made is very strong. Treated material gives a good yield of pulp which bleaches easily, and produces a strong paper, but paper having less strength than that made from the fiber receiving no treatment.

3. With the smaller amounts of caustic, the paper produced from treated fiber is excellent for bag or wrapping purposes; with the larger amounts, the pulp compares favorably with rag stock.

4. A micrographic study of caroá shows the fiber to be cylindrical and, comparatively, long and of small diameter. These properties tend to produce good felting of fibers and give compactness and strength to the resulting sheet.

[7] The Manufacture of Pulp and Paper, Vol. 4, pp. 38, 41, 44.

FIG. 3
Caroá and Rag Fibers

FIG. 4
Caroá and Sulphite Fibers

DRYING BOARDS

By D. Manson Sutherland, Jr., Panelyte Board Company, Trenton, N. J.

The problem of drying boards flat and quickly has engaged the attention of the board industry for many decades, and although progress has been made, the best solution remains to be found.

The Earliest Types

The earliest types consisted of circulating warm air into a chamber in which the boards were hung or placed in racks or trucks. The length of time required for complete drying depended on thickness of the sheets and volume and temperature of the air circulated, but buckling was unavoidable.

Various methods of heating and circulating on through the tunnel or compartment have been used, and improvements in efficiency have been obtained, but buckling has continued to be troublesome and a serious loss.

Vacuum dryers have been used for drying boards ranging from 0.187 and upward, but even the low temperature that is possible by this process does not overcome buckling.

Continuous driers in which the boards are passed between a series of rolls in a chamber heated with steam coils and hot air circulation. give good results as far as buckling is concerned, but the cost of this apparatus is high and consequently not available to the average board mill.

Systems using breathing heated plates have tried with some degree of success, but a perfectly flat board is difficult to produce.

Case Hardening of Surfaces

In drying problems considerable stress has been given to case hardening of the surfaces, and many claims have been made that apparatus now available eliminates this difficulty, but such result can only be obtained by reducing temperature and thus lengthening the drying period. Practically all machines on the market seek to remove the moisture as soon as it evaporates from the board, although some claim to retard this in some manner until the drying is partially completed, but again this can only increase the drying time.

A method of drying sheets of pulp by means of superheated steam in direct contact with them demonstrated that temperature as high as 700°F. could be used without injury to the fibers, providing air, i. e., oxygen, was excluded. High temperatures containing moisture seemed to have no harmful effect and dried sheets in a few minutes, where hours are ordinarily required, but the cost of the appaartus and need for skilled operation has so far prevented commercial application.

Obviously the higher the temperature used in drying the quicker the operation will be, but the difficulty of preventing case hardening and overcoming other obstacles mentioned above have appeared to be insurmountable.

New Process Recently Patented

After many years of study, experiments and practical working, a new process has recently been patented which gives promise of revolutionizing methods of drying boards.

This process consists of applying steam heat at 100 lb. pressure or less by means of cast iron plates on each surface of the board, giving a maximum temperature on the surface of the plates of approximately 290°F.

The moisture is removed by enabling it to pass between the interstices of a fine wire mesh, which is placed in between the board and the steam heated plates. The temperature in the plate insures uniform evaporation over the entire surface and the edges dry after the center because the moisture must pass over the edges to escape, thus the effect is the direct opposite to existing types.

Furthermore, the plates are kept tightly against the board, so that a perfectly flat sheet is produced.

Board manufacturers will also realize that this process does not invoke the use of air fans or any operating mechanism, except when the machine is opened for the removal of dried boards and loading of wet sheets. A wire mesh as fine as 65 per square inch can be used, thus avoiding any surface marks which might be detrimental in some cases.

This type of dryer can be designed for traveling wires so as to easily load and unload large and heavy sheets without marring the surface, and can also be built vertically to economize on floor space.

This type of dryer will dry a sheet of 0.250 thickness made of mixed paper containing 50 per cent moisture, in 30 minutes, and other thicknesses in proportion.

Aerial Service or Forest Patrols

Forestry work has made great strides in Canada through the use of aeroplanes. In flying operations the Royal Canadian Air Force during 1924 took up 3,340 hours of working time and there was not a single fatality or any accident involving serious injury to any of those engaged in this vocation. Returns to the end of October show that of the total flying time, 1,220 flying hours were for air force training, test flights, etc., sixty hours were flown during operations with the militia forces; 16 hours joint operations with the Royal Canadian Navy, and the remaining 1,940 hours were flown wholly in connection with the work of other Government Departments.

The Forestry Branch is using the air service more and more. In the provinces of Alberta and Manitoba last year on forestry patrol involving 1,360 flying hours was carried on. Over three million acres of forest land in Alberta were covered twice daily by forest patrol in the west during the season of fire hazard. In Manitoba 40,000,000 acres were under observation from the stations at Victoria Beach and Norway House, and, in some instances, fire fighting forces, with their pumps and gear, were transported to the scene of the fire by planes. No less than 40,000 square miles were photographed.

Pulpwood Resources Substantial Asset

The pulp and paper mills of Ontario now have a pulping capacity of 850,000 tons annually and a paper capacity of 700,000 tons annually. This industry is forging to the front as one of the premier activities of the province. A recent statement issued by the administration says that, up to the present, only some 40,000 square miles of an available 260,000 square miles have been under the axe and the government is adopting a very sound policy of reforestation that will assure this great natural asset for all time. In addition the province has a virtually limitless supply of merchantable timber in both soft and hard woods. The capital invested in the pulp and paper industry of Ontario is more than $140,000,000 and the average production of pulpwood is one million cords. The value of the product of pulp and paper at the place of preparation, including raw wood, pulp exported and paper made, is $70,000,000.

Box Board Men to Meet in Washington

Chicago, January 2, 1925.—John R. Mauff, general manager of the Box Board Association, 400 North Michigan Avenue, says that information has just been received from Hon. James J. Davis, Secretary of Labor, that there will be a conference of the box board industry at two o'clock Thursday afternoon, January 15. the Box Board Association will therefore hold its regular monthly meeting at the New Willard Hotel in Washington at ten o'clock on the forenoon of the same day.

Section of the

COST ASSOCIATION OF THE PAPER INDUSTRY

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Conducted by THOS. J. BURKE, C.A., Sec-Treas

TREATMENT OF RAW MATERIAL*

Rags, Wood Pulp and Waste Papers

By Helen U. Kiely, Chief Chemist, American Writing Paper Co., Holyoke, Mass.

Each mill is equipped individually for handling its raw materials, such as rags, wood pulp, waste papers and process supplies. However, there are a few general rules that must be adhered to if any sort of accurate costs are to be maintained. A correct standard for each grade of raw material must be determined and followed if the manufacturer is to gauge the efficiency of his mill, control operations or adopt corrective measures with any hope of success.

Treatment of Rags

When the bale of rags comes in from the car, it should be weighed to check the weight recorded on the invoice sheet. The bale of rags is opened and divided into three parts—the bale wire, packing and wrapper (such as bagging, old carpets) and the rags. The rags should be carefully inspected at this point to be sure there has been no undue wetting of them. For routine work it has not been found necessary to determine moisture on rags as received. This is seldom over 2 per cent. An occasional moisture test on rags would not be amiss at different seasons of the year. If the wrapping and wire figure over 3 per cent, the excess tare is figured and a charge back on the dealer reported.

The bale of rags then goes to the thresher for the preliminary dusting before sorting. The rags are run from the thresher into baskets or cars or even dropped directly onto the sorting tables. The dust from the rags is baled and weighed and sold. This is credited against the price of rags.

On the sorting tables a triple division of the rags is again made. Muss (including old buttons, clets, metal parts, etc.): out-throws (woolens, mohairs, black, etc.) and sorted rags. The muss and out-throws are baled and weighed and also credited to the cost of the rags. The sorted rags are filled into baskets and carefully weighed, recording weight and number of the bleach upon a tag. This is what is known as the dressed weight of the rags and it is from this weight the invisible shrinkage on the rags is determined. The shrinkage up to this point may be called the "visible shrinkage."

If the weight of the dressed rags is carefully recorded it does not seem advisable to weight the rags as they come from the final dusting, previous to entering the rotary. There is some waste as muss and dust from the dusters but not sufficient to materially change the gross weight charged to the rotary, especially on new rags.

*Address Delivered before Cost Association of The Paper Industry at the Commodore Hotel, New York City, December 11, 1924.

Determining Amount of Alkali

It is most essential that the man loading the rotary boiler shall have a quick and easily obtainable figure showing the weight of rags loaded to the rotary. From this figure he can determine the definite amount of alkali and water to add. This figure should be determined by knowing the exact charge and not by approximating the pounds added to the rotary. Considerable waste may be saved by varying the per cent of alkali with the varying weight of bleaches or cooks. Too often the amount of water and alkali is kept constant, always using the same amount regardless of charge of rags.

The bags of soda ash or barrels of lime should be weighed before dissolving in the mixing tank and the weight recorded on invoice blank.

Temperature gauges to supplement the pressure gauges for rotary boilers have been recommended and these, I believe, are working advantageously. For example, it is common practice in mills at the present time to turn on the steam at the boiler, either with or without a reducing valve. After the steam has been on for two or three hours it is customary in many mills to shut it off and allow the boiler to remain for six to eight hours without steam. The surface of the rotary boiler is so large that the temperature may drop several degrees, while the pressure may not drop materially. Cooking of rags is done by temperature, yet excessive cooking will result in over-cooked rags requiring more bleach to bring up the color, and, therefore, loss in strength and a greater tendency to yellow with age. A recording temperature gauge is not difficult to install and may be a means for saving in both steam and time for the individual mill. However, this point is still open for discussion, many mills believing the pressure gauge will answer the purpose.

Loading Into Stock Cars

After the boiler the rags are loaded into stock cars, the number of the bleach or cook being marked on each car and carried to the washers. The possibility of weighing the rags from the boiler has been considered as giving a figure for shrinkage from sorting tables through cooking. However, the moisture content in these rags would vary considerably as also the per cent of lime and insoluable soap retained. It has, therefore, seemed advisable to take this weight after washing, bleaching and before adding to the beater.

After the rags are washed and bleached they are dropped into the drainers and it is most advisable that only one bleach be added to each drainer and each carefully marked.

When required for use the stock is dug out and filled into stock cars. The man digging the stock has been instructed to what height to fill the car and he also reports how many cars he obtains from the drainer. The car equivalent in weight of dry rags has been previously determined. This is done by finding the weight of the car empty, then getting the weight of the car with the regular amount of loading, determining the moisture in this car and figuring dry weight of the car. By multiplying the number of cars obtained by the car equivalent and comparing with pounds dressed weight rags charged to the boiler, the shrinkage on the rags may be determined. This car equivalent should be taken on a number of cars of different grades of rags. The following table will show how the cars vary and show the need for a careful loading of individual cars.

Gross Weight lbs.	Tare lbs.	Net Weight lbs.	Dry Content per cent	Dry Content lbs.
880	340	540	29.8	158
935	303	632	19.8	125
933	337	596	28.5	170
862	320	542	33.8	183
833	350	483	37.4	181
772	310	432	34.8	150
850	339	511	33.9	173
884	382	502	33.0	166
1068	342	726	23.2	161
1007	340	667	26.1	174
1102	306	796	23.3	185
904	364	540	33.4	180
1105	310	795	31.4	250
712	320	392	49.8	195
1228	350	878	33.1	290
846	360	486	34.7	168
940	352	588	30.9	182
889	330	559	32.4	181
1328	361	967	26.1	252
1381	370	1011	24.6	249
850	382	468	32.1	150
884	347	537	38.7	208
835	345	490	33.0	162
744	346	398	52.6	210
772	387	385	38.9	149

This method is by no means perfect and offers many chances for error. It might be interesting to know that a recent check up of car equivalents at two of our A. W. P. mills compared with results obtained over six months ago, showed not over a 15 pound variation on dry weight when an average of twenty-five cars was taken. A very large error is introduced if too few cars are sampled in determining the average figure.

Invisible Shrinkage Obtained

From the data it can be seen that the error is not so great as to render the figures valueless. When the car equivalent for the various grades of rags is determined regularly a very fair figure for the invisible shrinkage of the rags is obtained.

In our mills we check this figure by running what we call shrinkage tests on our various shipments of rags. A 10 lb. sample of the rags ready for the boiler is sent to the laboratory. We actually make a boiler cook, duplicating mill conditions as far as possible. After cooking it is washed, bleached and dried. The shrinkage through these processes is then determined. We have determined the shrinkage on all the common classes of rags. You may be interested in some of these figures.

	Shrinkage Per cent
Khaki	21.2
Chain Hosiery	12.5
Cable Cord	9.7
Heavy Canvas	15.5
Washables	14.0
Grey Gloves	18.0
Fancy Shirts	10.6
Buckram	72.2
Oily White Rags	32.5
Sugar Hose	36.4
Silesias	1.35
No. 1 White Shirt Cuttings	16.3
Bleached Muslins	40.2
Unbleached Shoe Cuts	28.0
Old Collars	9.0
Black Silesias	5.0
No. 1 New Cottonades	7.0
Canvas Cuts	10.0
Tobacco Bags	14.0
Bleached Shoe Cuts	24.5
New Collars	7.0
Bleached Braid	3.5
Grey Glove Linings	31.9
Shade Cuttings	45.04
White Netting	46.0
Sized Shoe Cuttings	66.1
Sugar Canvas	20.0

When the cost man has these figures, it gives him an additional check on the mill operations, and when a big discrepancy arises he knows something has happened. At present we have no other constant check upon our beater engineer using a constant furnish. The results may only be obtained by difference. Microscopic analysis cannot be made upon each beater but if it is made on an occasional beater through a run we are safe in assuming the same procedure is being followed throughout.

Treatment of Old Papers

The old paper bales are weighed and sorted into three groups, namely, ground wood, sacking, wire and waste. Each group is weighed separately and given a separate recovery value. The old papers are next dusted and the dust is weighed if there is a considerable amount. In some lots of old papers, such as over-issue magazines, the dust is small enough so that it can be neglected. The sorted old papers, freed of dust, are run over a scale, the weight recorded on each basket. The usual sorting room charges are applied to the net sorted magazines at this point of the process.

The stock is next cooked. When the sorted papers are furnished to the rotary to be cooked with soda ash, the soda ash is weighed dry, dissolved in a mixing tank with water, until the entire charge of soda ash has been flushed into the cooker with a known volume of water. It has been found in mill practice that the addition of soda ash dissolved in a known volume of water gives better results than adding dry soda ash and water after furnishing the old paper. Most of the mills regulate the cooking process by a steam indicating gauge. When this gauge is on the main steam line it often indicates the pressure in the main steam line rather than measuring the pressure inside the rotary. The recording thermometer may be used here to advantage as in the case of rag cooking.

No allowance is made for shrinkage taking place in the cook. The loss in weight due to cooking has been found from numerous tests to be so small that it may be neglected in figuring costs. Cooking shrinkage will vary with the kind of stock furnished to the boiler, but where the shrinkage is small, it has been found that the dry matter deposited by evaporation in the stock from the dissolved chemicals almost completely compensated the shrinkage losses due to the carrying away of dissolved materials in the black liquor draining from the stock.

In furnishing the washers from this boiler load, the dry fiber furnished to each washer may be accurately calculated by the net sorted weight determined in the sorting room, divided by the num-

ber of cars filled from the boiler and taken as a sum of the cars furnished to each washer. When it is understood that ordinary old papers, such as house-to-house canvas magazines, will carry as an average about 20 per cent of clay, filler, or other material that is not fiber, it is obvious that considerable shrinkage must be expected when this stock is washed. This shrinkage is commonly about 90 per cent of the filler contained.

How Shrinkage Is Found

For example paper containing 20 per cent of filler when added to the washers may carry about 2 per cent in the half stuff. A method has been devised for determining this shrinkage. Heretofore, the cost man has applied all his charges to the number of pounds of stock which was furnished to the cooker at the beginning of the process, and since there was a total shrinkage of at least 20 per cent during the process, it is evident that his cost figures per pound of stock must have been incorrect, because the costs were divided among a greater number of pounds than were actually obtained after the old papers had been through the entire treatment. The method for determining the washer shrinkage is as follows:

When the washer is furnished, it is filled to a point which has been previously determined, to mark a known capacity in that washer. This point could best be permanently set on the inside of the washer measuring down a definite distance from the top of the washer rather than up from the bottom for convenience. When the washer is accurately and evenly filled to the prescribed point, a sample is taken in a container, struck off flush with the top, and poured upon a suction mold equipped with a very fine wire, say of 120 meshes per inch. The water is drawn from it, the sample dried in the oven and weighed. Then the usual washing and bleaching process is carried on. The washer is continuously letting out water which contains some ink, filler and fiber which were part of the original furnish.

When the stock has been sufficiently washed and is ready to bleach, bleach liquor is used which has been made by weighing the bleach from the drum, putting together a known quantity of bleach and water in an agitating tank, drawing off the bleach liquor, testing for strength. The hydrometer is usually used but when a chemist is available the titration method is to be preferred.

Adding Bleach to the Washer

The bleach is added to the washer through a measuring tank. If an accelerator is used with the bleach, it will be in quantities sufficiently small so that an accurate cost may be kept by adding it in known strength by a quart or gallon measure.

When the stock is sufficiently washed and bleached and is ready to be dropped from the washer, another sample is to be taken. Before taking the sample, the washer is filled to exactly the same height as when the washing was begun and the first sample taken. This second sample is to be taken with the same container, at exactly the same point in the washer, put through the same suction mold, into the same oven, and weighed as in the previous case.

The difference in weight between the first sample dried and the second sample dried is the basis for calculating the shrinkage which resulted from washing. Knowing the volume in the washer when the sample was taken, and knowing the density of the stock as determined from the sample, and also knowing how much was lost by washing it, the number of pounds of the original furnish lost while the stock was in the washer can be calculated. Washer volume x density per unit to start x per cent loss = shrinkage.

It might be stated here that it is very necessary that care be taken in sampling the washer correctly. Within the first fifteen minutes of washing a large part of the filler washes out. For this reason the first sample should be taken not later than three minutes after the washer has been furnished and is mixing properly. In every case the sample should be an average sample and the usual percautions that are necessary in making duplicate tests apply to the entire procedure. After the last sample has been taken the washed stock can be dropped to the chest. The dry content of each washer should be equal to the dry content of the last sample taken, multiplied by the known volume of the washer when the sample was taken. When the washer is dropped to the chest, this figure can be checked.

Moved About by Pumping System

From the washer chest the stock goes to the screens where it is diluted with water so that the fiber can be separated from the dirt, and it is subsequently run through a thickener before pumping. The stock is moved about the mill by a pumping system, which is kept continuously in circulation. This has an additional advantage over the old system of trucking in cars that is not often appreciated, namely the continuous circulation of the stock at from 5 to 7 per cent density which has an action upon the fiber somewhat similar to a mild beating action caused by the friction while in motion and some paper makers say that this circulation serves to take the place of some of the time they would have to keep the stock in the beater under conditions where the stock is moved in cars. It should be understood that the slush or pumping system for distributing old paper stock is given preference over all others. It is a well known fact that pumping is absolutly the cheapest method of conveying material.

The weight of the discarded material at the screens is small and would have such a small ratio to a cook of five tons that it can be neglected or, if desired, figured for several cooks, an average taken and added in all cooks to the shrinkage determined from the two samples taken from the washer.

As an alternate method for determining the washer shrinkage we recommend a liquid level gauge properly calibrated. This gauge may be set in the chest to read the depth to which the chest is filled in inches, each inch representing a definite volume, then the height to which the depth in the chest is increased when this particular washer was dropped into it would tell how much fiber went in, if we only run one density test on the stock. Personally, we have had little success with liquid level gauges. They seem to be very hard things to keep in working order and have to be calibrated for use both with and without an agitator.

Stock Ready for the Beater

Now the stock is ready to be furnished to the beater. Suppose we take a concrete example. It has been found in some mills that the easiest way to transfer from the old system of cars to a new pumping system was to take the formulae of furnishes which the mill had been accustomed to using, and to supply a table which would give each car in the old furnish a new value in terms of inches of old paper stock pumped to the beater. In one case that comes to mind, it was found that the dry fiber in a car of old papers, as taken from the drainers before the pumping system was installed, was equal to seven inches in the beater for the first car, and six inches for every following car as supplied by the pumping system. So, for furnishing two cars of magazine stock, the beater helpers were instructed to fill the beater thirteen inches deep with slushed old paper stock bfore any other parts of the furnish were put into the beater. Here some care is necessary, because slushed stock of six or seven per cent consistency is sufficiently viscous so that it will measure deeper near the inlet from the pumping system than in other parts of the beater. Since the beaters, are usually calibrated by filling them from a tank of known volume, such as a portable size tank, using water as the liquid, it can be seen that it is necessary to keep the surface of the stock which is being measured as level as the water which was used to calibrate this beater in the first instance. Some paddling of the stock may have to be done where only a small amount of old papers are furnished to a beater, and if accurate results are wanted, it is necessary to have an even distribution over the entire beater when measuring the depth, if water was used for the original calibration.

Modern Measuring Method

The most modern method of measuring stock furnished to the beater is by means of an intermediate measuring tank of known volume, containing a liquid level gauge or flow gauge. This tank may be connected to the pumping system between the chests and the beaters. This gives a convenient and accurate measuring device when there is sufficient room in the mill.

It has frequently been true that the total charges for the treatment of old papers have been applied to the number of pounds of material which were furnished to the boiler as net sorted stock, while as a matter of fact the costs are to be applied to the actual number of pounds produced. We have found that there is at least a 25 per cent shrinkage in the washers and, therefore, only about 75 per cent of the sorted material which was furnished to the cooker is obtained.

In any cost figures on old papers several washer tests should be taken, then if it is found that the shrinkage is fairly constant this figure might be applied to the net sorted paper weight. Personally I think this would be more practical and sufficiently accurate for most purposes. This shrinkage figure could be checked up every few months. There has been very little change in the furnish on magazines in the past few years so the shrinkage figure should not vary appreciably.

Treatment of Wood Pulp

The determining of costs on wood pulp would be very simple if the weight and moisture content of the pulp did not show such a wide variance. These variances occur not only in units made by different mills but in units of the same kind made in the same mill. The beater man frequently runs into this difficulty in furnishing a beater to a definite specification. The first roll of pulp weighs 75 lbs. air dry, the next one from the same source may weigh 15 lbs. The moisture content in these rolls may vary from 5 per cent to 30 per cent, introducing another factor for the beaterman in trying to get a definite furnish. It is not practical to weigh each individual roll and calculate its air dry weight both from the time necessary and the cost.

Some time ago there was some agitation in the Cost Association for standard unit weight and standard moisture content in wood pulp. I have never heard whether this went through or if not why it was abandoned. Any standardization that the pulp manufacturer might agree upon for unit sizes and moisture content would eliminate considerable trouble in establishing adequate costs for the papermaker in his use of wood pulp.

At present I do not believe there is any general practice for measuring the amount of pulp used. In some cases it is expressed in pounds, in some cases in inches, in others in bundles while still in others in skid loads. When the pulp is received at the mill it must be sampled and weighed and the actual dry weight must be determined to ascertain if the paper mill is receiving the invoiced weight. This sampling and moisture testing of the pulp must be done according to one of the recognized methods.

The Auger Method is best suited for baled hydraulic pressed lap pulp for baled pulp in sheets and rolled pulp. At least 10 per cent, preferably 20 per cent of the shipment is sampled. Samples must be drawn from sound and intact bales and from different sections of the shipment. The sample is taken by boring into a bale to a certain depth with a special auger which cuts a disc about 4" diameter.

The Strip Method

The Strip Method is suitable for sampling lap pulp and hydraulic pressed laps, pulp from wet machine and rolled pulp. In this method a strip 2" wide is taken through the center of the lap alternating long way and short way, starting about half way through the lap. The samples as taken are immediately placed in a metal can with tight fitting cover and the net weight obtained as soon as possible. After weighing, the wet samples are dried in an oven at 212° F. until bone dry and the weight determined. By dividing the per cent bone dry by .9 the air dry percentage will be obtained. The per cent moisture is put on a tag, which is put on the shipment of pulp. The per cent of moisture in the pulp is, therefore, the first figure absolutely necessary in determining cost figures on pulp.

After the moisture has been determined there seem to be three or four methods in general use for checking the number of pounds dry pulp added to the beater. It would be impractical to weigh each roll, or bundle of pulp and from this weight and the moisture figures weight of dry pulp used. If an average weight for the different rolls or bundles is determined by weighing at least 10 per cent of the rolls as it comes from the car and dividing by the number of rolls taken and this average weight is put on the tag with moisture content, it is only necessary for the beaterman to report the number of rolls used for the cost man to figure the number of dry pounds of pulp used.

Methods for Lap Pulp

For lap pulp there are two general methods used and the accuracy of each is about the same. An average weight for a lap is determined by weighing a sufficient number of laps of an individual pulp shipment to assure an accurate average. From the average weight per lap and the moisture content previously determined the number of pounds of dry pulp used can be determined.

In lap and skid pulp some mills prefer to express the pulp used in inches. From the moisture content and the weight and height of the skid an average figure for the number of pounds of dry pulp to the inch may be figured. The beaterman then reports his furnish as so many inches of pulp. The cost man, knowing by previous tests the number of pounds of dry pulp to the inch, may readily check pulp consumed.

For mills making their own wood pulp the common practice is to use the pulp in slush form. The amount of pulp furnished to a beater may be figured by noting the number of inches dropped on a liquid level gauge in a tank of known capacity and determining consistency on pulp in the tank. The cost man must be sure of the contents of the chest and also that the liquid level gauges are recording properly by seeing that they are calibrated frequently.

Personally, I think many discrepancies could be overcome by specifying the number of pounds of sulphite to be added to the beater instead of saying balance sulphite. I think more care would be taken with the rag furnish so that not more than the specified amount of sulphite would have to be added.

Process Supplies

The various process supplies, as glue, rosin, alum, filler, etc., must be determined in pounds per gallon or in some covenient unit and the beaterman record in his furnish the number of pounds, pails or inches used. The equivalent of his furnish in pounds must be determined for the cost man by making a series of tests and taking the average number of pounds to the pail, bucket, etc., in figuring his consumption. Whenever the strength of a solution is changed the cost man should be so informed so he may determine a new equivalent, otherwise a loss that cannot be accounted for, will appear.

In a case of filler retention the best method at the present seems to be to determine the ash content in the various and grades of papers in which it is used. From these figures an average retention figure for each grade of filler is determined.

It is recommended that all cost equivalents be checked every three months if any reliability is to be placed on their values. It is only by repeated checks upon the figures the cost man is using that any advance can be made. The cost man should be thoroughly acquainted with manufacturing to be able to see the chances for avoiding waste and reducing his costs as the small margin of profit that is realized on the average grades of paper does not permit of leaks and preventable wastages.

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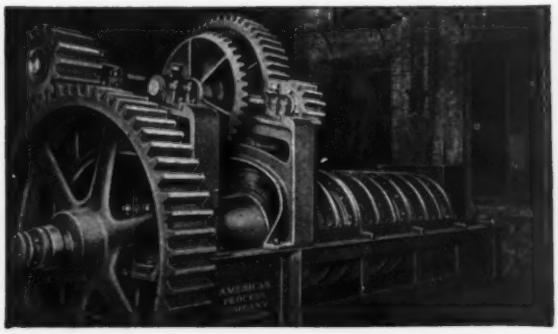

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C. R. Spence & Co., by same, 88 bls. rags.
Linen Thread Co., E. Dollar, Alexandria, 35 bls. cottonwaste.
Garfield National Bank, Kepwick Hall, Marseilles, 272 bls. rags.
Amsinck, Sonne & Co., Inc., by same, 68 bls. rags.
E. J. Keller Co., Inc., Kepwick Hall, Barcelona, 523 bls. rags.
Katzenstein & Keene, Inc., by same, 236 bls. rags.
Castle & Overton, Inc., by same, 200 bls. bagging.
E. J. Keller Co., Inc., Kepwick Hall, Marseilles, 50 bls. rags.
E. J. Keller Co., Inc., J. L. Lockenbach, Kobe, 360 bls. rags.
The Stone Bros. Co., Inc., Jessmore, Barrow, 20 bls. rags.
Castle & Overton, Inc., by same, 8 bls. rags.
Brown Bros. & Co., Assyria, Glasgow, 47 bls. rags.
A. W. Fenton, Inc., Stromboli, Naples, 251 bls. rags.
The Stone Bros. Co., Inc., by same, 103 bls. rags.
The Star Woolen Co., Anaconda, Antwerp, 25 bls. rags.
E. J. Keller Co., Inc., by same, 40 bls. rags.
The Stone Bros. Co., Inc., by same, 294 bls. rags.
G. M. Graves Co., by same, 52 bls. rags.
L. H. Abenheimer, by same, 170 bls. rags.
Castle & Overton, Inc., by same, 37 bls. rags.
D. M. Hicks, Inc., by same, 43 bls. bagging.
Royal Manufacturing Co., by same, 89 bls. cotton waste.
S. Birkenstein & Sons, Virgilia, London, 145 bls. rags.
Amsinck, Sonne & Co., Inc., by same, 146 bls. rags.

OLD ROPE

Brown Bros. & Co., Montana, Antwerp, 121 coils.
Brown Bros. Co., Stockholm, Gothenburg, 77 coils.
Brown Bros. & Co., Ryndam, Rotterdam, 212 coils.
Brown Bros. & Co., Zeeland, Antwerp, 150 coils.
Brown Bros. & Co., Deutschland, Hamburg, 45 coils.
E. J. Keller Co., Inc., by same, 29 coils.

WOODPULP

Scandinavian Pulp Agency, Inc., Stockholm, Gothenburg, 381 bls. sulphite pulp.
E. M. Sergeant Co., by same, 766 bls., sulphite pulp.
E. M. Sergeant Co., by same, 309 bls. dry soda pulp.
Price & Pierce, Ltd., by same, 750 bls. dry wood pulp.
Whalen Pulp & Paper Mills, L. Nillsen, Vancouver, 4,816 bls. unbleached pulp.
M. Gottesman & Co., Inc., N. Amsterdam, Rotterdam, 750 bls. wood pulp.
M. Gottesman & Co., Inc., Bussum, Ohrviken, 3,000 bls. chemical pulp, 500 tons.
M. Gottesman & Co., Inc., Bussum, Sundsvall, 600 bls. sulphite pulp, 100 tons.
Johaneson, Wales & Sparre, Inc., by same, 2,250 bls. sulphite pulp, 375 tons.
Pagel, Horton & Co., Inc., Bussum, Hornefors, 4,200 bls. sulphite pulp, 700 tons.
Central Union Trust Co., Bussum, Kopmanholmen, 1,219 bls. chemical pulp, 203 tons.
Price & Pierce, Ltd., by same, 914 bls. chemical pulp, 152 tons.
Bulkley, Dunton & Co., Modica, 1,250 bls. wood pulp.
Bulkley, Dunton & Co., Oscar II., 600 bls. wood pulp.

BALTIMORE IMPORTS

WEEK ENDING JANUARY 3, 1925

A. Jacob & Co., Quaker City, London, 43 bls. rags.
A. Jacob & Co., Pipestove County, Havre, 267 bls. rags.
H. Masson, by same, 99 bls. rags.

(*Continued on page 58*)

A Remarkable Range of Grades, Textures and Weights

Orr Endless Felts can now be obtained up to 86 feet in length.

With our enlarged new equipment we can now furnish Paper Manufacturers with endless felts up to 86 feet in length.

Paper Manufacturers who carefully check manufacturing costs, and also strive to produce more and better paper at a lower cost per ton, prefer the unvarying quality and long service of ORR felts. A trial of them will bring about a preference that will be lasting.

THE ORR FELT & BLANKET COMPANY, Piqua, Ohio

The B Q-DEC. QUALITY PULPS

HAFSLUND NORWAY — **"HAFSLUND BEAR" Bleached Sulphite**

F. HAGA — **"FORSHAGA" Bleached Sulphite**

KRAFT HURUM — **"HURUM SPECIAL" Extra Strong Kraft**

NORWAY SPECIAL

KOOS BAC — **"BAMBLE" Extra Strong Kraft**

The Borregaard Company
Incorporated
200 FIFTH AVENUE NEW YORK, N. Y.

PERFORATED METAL SCREENS
IN STEEL AND ALLOYED METALS
For Pulp and Paper Mills

Elevator Buckets, Conveyor Flights and Troughs, General Sheet and Light Structural Work

Light and Heavy Steel Plate Construction

HENDRICK MANUFACTURING CO.
75 Dundaff Street, Carbondale, Pa.
New York Office, 30 Church St.
Pittsburgh Office, 544 Union Trust Building

Storage and Sprinkler Tanks as well as Processing Tanks and Acid Towers to meet all Paper Mill requirements. High grade Cypress, Cedar, or Fir —well seasoned. Immediate shipment. Expert erecting crews to install.

G. Woolford Wood Tank Mfg. Co.
Lincoln Bldg. Philadelphia, Pa.

Buchanan & Bolt Wire Co.
HOLYOKE, MASS.
Since 1878.

Fourdrinier Wires

Dandy Rolls

Cylinder Covers Best Quality Always

Imports of Paper and Paper Stock

(*Continued from page 56*)

A. W. Fenton, Inc., Artigas, Avonmouth, 235 bls. rags.

Castle & Overton, Inc., Westerwald, Hamburg, 885 bls. wood pulp.

M. Gottesman & Co., Inc., Ingerfire, Stockholm, 2,050 bls. wood pulp.

Johaneson, Wales & Sparre, Inc., Devel, Hamburg, 390 bls. sulphite pulp.

Johaneson, Wales & Sparre, Inc., Tasmanic, Gothenburg, 150 bls. sulphite pulp.

Bulkley, Dunbar & Co., Modica, 1,250 bls. wood pulp.

Bulkley, Dunton & Co., Ingerfire, 500 bls. wood pulp.

PHILADELPHIA IMPORTS

WEEK ENDING JANUARY 3, 1925

Webb & Sons, Anaconda, Antwerp, 27 bls. rags.

Katzenstein & Keene, Inc., by same, 387 bls. rags.

E. J. Keller Co., Inc., by same, 593 bls. rags.

The Stone Bros. Co., Inc., by same, 38 bls. rags.

D. M. Hicks, Inc., by same, 58 bls. rags.

Union National Bank, by same, 96 bls. rags.

Baring Bros. & Co., Ltd., by same, 231 bls. rags.

S. Birkenstein & Sons, by same, 213 bls. rags.

J. A. Steer & Co., by same, 249 bls. rags.

Philadelphia National Bank, by same, 52 bls. rags.

New York Trust Co., by same, 579 bls. rags.

J. A. Steer & Co., Jessmore, Belfast, 87 bls. rags.

E. J. Keller Co., Inc., Recca, Leghorn, 128 bls. rags.

E. J. Keller Co., Inc., Yeifuku Maru, Hamburg, 193 bls. rags.

E. J. Keller Co., Inc., by same, Konigsberg, 39 bls. rags.

E. J. Keller Co., Inc., Boschdyk, Amsterdam, 112 bls. rags.

E. J. Keller Co., Inc., by same, Rotterdam, 137 bls. rags.

E. J. Keller Co., Inc., Careuco, Leghorn, 19 bls., rags.

E. J. Keller Co., Inc., Nevisian, Hamburg, 132 bls. rags.

E. J. Keller Co., Inc., by same, 100 bls. thread-waste.

E. J. Keller Co., Inc., by same, Copenhagen, 97 bls. rags.

E. J. Keller Co., Inc., by same, Antwerp, 165 bls. rags.

Castle & Overton, Inc., Recca, Leghorn, 44 bls. rags.

Castle & Overton, Inc., Careuco, Leghorn, 71 bls. rags.

Castle & Overton, Editor, Rotterdam, 57 bls. rags.

Castle & Overton, Inc., London Commerce, London, 372 bls. rags.

Castle & Overton, Westerwald, Hamburg, 820 bls. wood pulp.

Lagerloef Trading Co., West Gotoniska, 4,434 bls., 736 tons chemical pulp.

Johaneson, Wales & Sparre, Inc., Jethou, France, 2,400 bls. kraft pulp.

Johaneson, Wales & Sparre, Inc., Jethou, Kramfors, 900 bls. sulphite pulp.

BOSTON IMPORTS

WEEK ENDING JANUARY 3, 1925

M. Gottesman & Co., Inc., Ethel Wolf, Stockholm, 5,080 bls., wood pulp.

M. Gottesman & Co., Inc., Falco, Stockholm, 3,000 bls. wood pulp.

Lagerloef Trading Co., West Gotoniska, 6,887 bls., 1,214 tons chemical pulp.

Bulkley, Dunton & Co., Ingerfire, 750 bls. wood pulp.

NEWPORT NEWS IMPORTS

WEEK ENDING JANUARY 3, 1925

M. Gottesman & Co., Inc., Lucia, Trieste, 8,000 bls. wood pulp.

NEW ORLEANS IMPORTS

WEEK ENDING JANUARY 3, 1925

Castle & Overton, Inc., West Wauna, England, 34 bls. bagging.

Lagerloef Trading Co., Tripp, 1,826 bls., 300 tons chemical pulp.

BIDS AND AWARDS FOR GOVERNMENT PAPER

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., January 7, 1925.—The Government Printing Office will receive bids on January 9 for 31,400 pounds (400 reams) of various flat kraft wrapping paper. Bids will also be received on the same date for 23,000 pounds of various sizes 100 per cent sulphate pulp kraft wrapping paper.

The Government Printing Office will receive bids on January 14 for 51,600 pounds (3,200 reams) of white and dark pink various sizes glazed manifold bond paper. Bids will also be received on the same date for 40,000 pounds (16,000 sheets) of No. 2 quality, 25 x 30—No. 20 binders board and for 8,000 pounds (100 reams) of 19 x 24—80, white blotting paper.

The Government Printing Office will receive bids on January 12 for 12,500 pounds (1,000 reams) of 21 x 32—12½, No. 7 white record manifold bond paper. Bids will also be received on the same date for 3,150 pounds (100 reams) of 24 x 38—31½, No. 13 salmon manifold bond paper.

The Government Printing Office has received the following bids for 20,000—10 x 15-inch kraft envelopes: Union Envelope Company $9.85 per M; United States Envelope Company $8.65; R. P. Andrews Paper Company $12.40.

The following bids were also received for 10,950 pounds of 32 x 48—73, white super calendered book paper: Allied Paper Mills 7.25 cents per pound; Kalamazoo Paper Company 7.5 cents, and American Writing Paper Company 8.5 cents.

The Printing Office has also received the following bids for 13,400 pounds of 38 x 48—134, single coated two sides book paper; Allied Paper Mills 8.25 cents; Kalamazoo Paper Company 8.75 cents; Whitaker Paper Company 8.75 cents; Old Dominion Paper Company 10.79 cents; Barton, Hobart Paper Company 12 cents, and B. F. Bond Paper Company 11 cents.

The Mathers Lamm Paper Company has been awarded the contract by the Government Printing Office for furnishing 6,600 pounds, (200 reams) of 28 x 34—33, No. 13, white writing paper at 13.48 cents per pound, bids for which were received on December 22. The same firm will also furnish 3,937 pounds, (125 reams) of 24 x 38—31½, No. 13 blue glazed manifold bond paper at 14.48 cents per pound, bids for which were received on December 19. The American Writing Paper Company will furnish 260 reams of 17 x 28—20½, russet bond paper at $1.97 per ream bids for which were received on December 17.

Lindemeyr & Harker will furnish 50,000 lbs. (600 reams) of 26 x 38 white S and SC lithograph paper at 11 cents per pound, bids for which were received on December 15.

The Allied Paper Mills have been awarded the contract by the Government Printing Office for furnishing 10,950 pounds (150 reams) of 32 x 48—73, white super calendered book paper, at 7.25 cents per pound and the same firm will also furnish 13,400 pounds, (100 reams) of 38 x 48—134, single coated two sides book paper at 8.25 cents per pound. Bids for these items were received on December 31.

The Mathers, Lamm Paper Company will furnish 15,750 pounds, (500 reams) of 24 x 38—31½, No. 13 white writing paper at 13.45 cents per pound, bids for which were received on December 29. The same firm will also furnish 556 sheets of 25½ x 34½ blue pressboard at 20 cents per pound, bids for which were received on December 17.

Canadian News Print Mills Busy

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., January 7, 1925.—Most of the Canadian news print mills have connected for their 1925 output, says Trade Commissioner Meekins in a report to the Department of Commerce. News print production he says is being well maintained and sales are showing some improvement. The Canadian paper trade in general reports a steady demand and firm prices. The pulpwood market is approaching a more satisfactory basis with available stocks reduced from last year and increased buying anticipated.

The Home of Quality

FACTORY
132ND TO 133RD ST. & BROOK AVE

PAPER BAGS and SACKS

GLASSINE BAGS—SPECIALTIES

Operating a Modern Printing Plant

SCHORSCH & CO.

Manufacturers *Established 1901*

500 East 133d Street . New York

This Registered Trade Mark Octagon

on a Paper Bag vouches for Its Good Quality

KVP

Papers:

Genuine Vegetable Parchment

For wrapping all moist and greasy foodstuffs.

Bread Wraps—Waxed Papers

For tight-sealing cartons and wrapping dry foods.

Bond and Ledger Papers

All standard sizes, weights and colors.

Handy Household Papers in Rolls

Ask and ye shall receive full information.

KALAMAZOO VEGETABLE PARCHMENT CO.

Manufacturers of PARCHMENT, WAXED and BOND PAPERS

KALAMAZOO, MICHIGAN

Where *Quality* is the watchword.

Clay

300 tons daily

AMERICAN MADE FOR AMERICAN TRADE

Some portion of our clay production is *pulverized*. That part of it which is *pulverized* is, as far as we know, the only *pulverized clay* which is washed and refined before being pulverized.

This insures greater freedom from impurities and an exceedingly uniform product.

Prices on M-E pulverized clay may surprise you even considering this additional treatment.

Let us submit samples and quote you

THE MINER-EDGAR CO.

110 WILLIAM ST., NEW YORK

FOURDRINIER WIRES

Dandy Rolls, Cylinder Molds,
Steel, Brass and Bronze
Wire Cloth
Bank and Office Railings.

CHENEY BIGELOW WIRE WORKS

Established 1842

SPRINGFIELD MASS.

J. ANDERSEN & CO.

21 EAST 40th STREET, NEW YORK CITY

Importers of Chemical Pulps

BLEACHED and UNBLEACHED

Agents for Kellner Partington Paper Pulp Co., Ltd. Sarpsborg, Norway; Forshaga, and Edsvalla, Sweden. Kronstädter Papierstoff—Fabriks Actien—Gesellschaft Mills at Tuciansky, Sv. Martin

Market Quotations

Quoted by Hepburn & Co., No. 74 Broadway, N. Y. City, to whom all inquiry for quotations on these or any other Securities is referred.

BONDS	BID	ASKED
Abitibi Power and Paper, Gen 6s 1940	98	100*
Advance Bag and Paper, 7s 1943	97	100*
Aroostook Pulp and Paper, 6s 1925	99	...
Bastrop Pulp and Paper, 7½s 1932	98	100*
Brompton Pulp and Paper, 6s 1927	93	95
Beaver Board, 8s 1933	87	89
Bedford Pulp and Paper, 6½s 1942	96	...
Berkshire Hills Paper Co., 8s 1941	...	100
Beaver Board, N. Y. Curb, 8s 1933	87	89
Beaver Products Corp., 7½s 1942	102	104
Brown Paper Co., 8s 1931	102	105*
Berlin Mills, 5s 1931	99	...
Bryant Paper Co., 6s 1942	97	100
Brown Company Serial, 6s 1925-43	97	100
Central Paper, 6½s 1925-42	90	95
Cape Breton Pulp and Paper, 6s 1932	100	102
Carthage Sulphite Pulp and Paper, 8s 1941	40	50
Champion Coated Paper Co., 6s 1924-34	...	102
Champion Fibre Co. Notes, 8s 1930	102	...
Cherry River Paper, 5s 1929	97	100*
Chicoutimi Pulp Co., 6s 1942	63	...
Donnaconna Paper Co., Ltd., 6s 1940	98	100
Eddy Paper, 7s 1931	96	...
Eagle Paper, 6½s 1932	96	100
Escanaba Paper, 6s 1933	84	88
Fox River Paper, 7s 1931	100	...
Fort Orange Paper Co, 7s 1942	90	...
Eddy Paper Co., 7½s 1931	95	98
Gair (Robert) Co., 7s 1937	98	100
Gilbert Paper Co., 7s 1927	97	...
Gilbert Paper Co., 6½s 1923-29	100	102*
Hammermill Paper Co., 6s 1930-39	98	101
Hummell, Ross Film Corp., 7s 1925	90	...
Jessup & Moore Paper Co., 6s 1939	92	96
Kenmore Pulp and Paper Co., 6s 1937	91	...
Lake Superior Pulp and Paper, 6s 1941	102	...
Mattagami Pulp and Paper 1st, 6s, 1937	30	40
Marinette & Menominee, 7½s 1936	104	107
Mead Pulp and Paper, 7s 1925-29	96	99
Mengel Company, 7s 1934	100	103
National Paper and Type, 6s 1947	96	99*
Oswego Falls Corp., 8s 1942	101	...
Orono Pulp and Paper, 5s 1941	93	96*
Orono Pulp and Paper, 6s 1943	97	100*
Oxford Paper Co., 6s 1947	99	101
Paterson Parchment Paper, 5½s 1927-28	...	100
Paterson Parchment, 6s 1938	96	99
Parker, Young Co., 6½s 1944	92	96
Price Bros. & Co., Ltd., 6s 1943	98	100
Provincial Paper Mills, Ltd., 6s 1940	97	...
Riordan Co., Series A, 8s 1940	90	93
Riordan Pulp and Paper, Ltd., 6s 1929	24	28
River Raisin Paper, 8s 1936	102	105
St. Regis Paper, 6½s, 1929-35	97	102
Smith (Howard) Paper Mills, 7s 1941	90	93
Smith (Howard) Paper Mills, 6s 1934	93	...
St. Croix Paper, 5s 1923-37	95	...
Stevens & Thomson Paper, 6s 1942	86	90
Spanish River Pulp and Paper, 6s 1931	105	...
Spanish River Pulp and Paper, Gen 8s 1941	107	109
Ticonderoga Pulp and Paper Co., 6s, 1940	91	95
Whittaker Paper, 1942	96	99
Watab Paper Co., 6½s 1942	98	101
Waterway Paper Products, 7s 1924-27	95	100
Wayagamack Pulp and Paper, Ltd., 6s 1951	84	88*

STOCKS	BID	ASKED
Abitibi Power and Paper, Com	62	63
Abitibi Power and Paper, Pfd	98½	103
Advance Bag and Paper, Com	8	12*
Advance Bag and Paper, Pfd	70	75*
Beaver Board, Com	5	8
Beaver Board, Pfd	35	38
Bryant Paper, Cap	12	...
Bryant Paper, Pfd	9	...
Brompton Pulp and Paper, Cap	32	33
Chicago Mill & Lumber Co., Com	63	...
Chicago Mill & Lumber Co., Pfd	97	100
Crown Williamette, Com	93	98*
Crown Williamette, 7% A, Pfd	98	SW
Donnaconna Paper, Pfd	95	100
Great Northern Paper, Cap	220	250
Jessup & Moors Paper, Pfd	76	80
International Paper Co., Com	50	53
International Paper Co., Pfd	71	73
Laurentide Co., Ltd., Cap	82	84
Mengel Company, Com	30	31½
Mengel Company, Pfd	72*	76
National Paper and Type, Com	70*	75
National Paper and Type, Pfd	85	90
Oxford Paper Co., Pfd	93	95
Provincial Paper Co., Com	90	100
Provincial Paper Co., Pfd	95	98
Price Brothers, Cap	36	38
St. Maurice Paper Co., Cap	83	88
St. Regis Paper Co., Cap	24	27
Smith (Howard) Paper Co., Ltd., Com	29	31
Smith (Howard) Paper Co., Ltd., Pfd	80*	84
Spanish River Pulp and Paper, Com	101	103
Spanish River Pulp and Paper, Pfd	111	113
Ticonderoga Pulp and Paper, Cap	145	...
Union Bag and Paper, Cap	48	50
United Paper Board, Cap	52	55*
West Virginia Pulp and Paper, Cap	54	57*
Whittaker Paper, Com	12	20
Whittaker Paper, Pfd	42	46
Zellerbach Paper, Pfd	98	100*

*Nominal.

Paper

(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@30.00
Superfine	14.00	@30.00
Tub Sized	10.00	@15.00
Engine Sized	8.00	@11.00
News—		
Rolls, contract	3.50	@ 3.90
Rolls, transit	3.75	@ 4.25
Sheets	4.00	@ 4.25
Side Runs	3.25	@ 4.00
Book, Cased—		
S. & S. C.	7.00	@ 9.75
M. F.	6.50	@ 8.75
Coated and Enamel	9.00	@15.00
Lithograph	9.00	@14.00
Tissues—		
White No. 1	.75	@ .90
White No. 2	.70	@ .80
Colored	.95	@ 1.90
Anti-Tarnish	1.40	@ 2.30
Kraft	1.00	@ 1.25
Manila	.75	@ .80
Kraft—		
No. 1 Domestic	5.50	@ 6.25
No. 2 Domestic	5.00	@ 5.50
Imported	5.50	@ 5.75
Manila—		
No. 1 Jute	9.00	@
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.00
Fibre Papers—		
No. 1 Fibre	5.50	@ 6.00
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.50	@ 2.75
S. Screening	3.25	@ 3.75
Card Middler	4.00	@ 5.00
Boards—per ton—		
News	42.50	@45.00
Straw	50.00	@55.00
Chip	42.50	@45.00
Binders' Boards	75.00	@80.00
Sgl. Mla. Ll. Chip	55.00	@62.50
Wood Pulp	70.00	@75.00
Container	62.50	@67.50
Sulphate Screenings—		
Coarse	.80	@ .90
Refined	1.75	@ 2.00
Ground Wood—		
Screenings	20.00	@25.00
Glassine—		
Bleached, basis 25 lbs.	12.00	@15.00
Bleached, basis 20 lbs.	14.00	@17.00

Mechanical Pulp

(Ex-Dock)

No. 1 Imported	32.00	@38.00

(F. o. b. Mill)

No. 1 Domestic	30.00	@35.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.75	@ 4.50
Easy Bleaching	2.90	@ 3.20
No. 1 strong unbleached	2.75	@ 3.25
No. 2 strong unbleached	2.50	@ 2.75
No. 1 Kraft	2.75	@ 3.00
Sulphate—		
Bleached	3.50	@ 3.65

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	3.45	@ 4.50
Easy Bleaching Sulphite	2.70	@ 3.25
News Sulphite	2.45	@ 2.75
Mitscherlich	3.00	@ 3.75
Kraft (Domestic)	2.70	@ 3.50
Soda Bleached	3.90	@ 4.10

Domestic Rags

New Rags

Prices to Mill, f. o. b. N. Y.

Shirt Cuttings—		
New White, No. 1	15.00	@16.00
New White, No. 2	9.50	@11.00
Silesias No. 1	10.50	@11.50
New Unbleached	13.50	@14.50
Washables	6.50	@ 9.25
Fancy	10.00	@10.50
Blue Overall	10.50	@11.50
New Blue Prints	7.50	@ 8.50
New Soft Blacks	5.75	@ 6.20
Mixed Khaki Cuttings	5.50	@ 6.00
Pink Corset Cuttings	10.50	@11.00
Pink Muslin	10.25	@10.75
New Light Seconds	3.25	@ 3.50
O. D. Khaki Cuttings	6.00	@ 7.00
Men's Corduroy	6.00	@ 6.75
New Mixed Blacks	4.00	@ 5.00

Old Rags

White, No. 1—		
Repacked	8.00	@ 9.00
Miscellaneous	6.50	@ 7.00
White, No. 2—		
Repacked	4.75	@ 5.25
Miscellaneous	4.00	@ 4.50
St. Soiled, White	3.25	@ 3.75
Thirds and Blues—		
Repacked	4.25	@ 4.50
Miscellaneous	3.25	@ 3.50
Black Stockings	4.00	@ 4.50
Roofing Rags—		
Cloth Strippings	3.15	@ 3.25
No. 1	3.15	@ 3.25
No. 2	3.05	@ 3.15
No. 3	2.00	@ 2.25
No. 4	2.75	@ 2.85
No. 5A	1.80	@1.50

Foreign Rags

New Light Silesias	9.50	@10.50
Light Flannelettes	11.00	@12.00
Unbl'chd Cottons	13.00	@14.00
New White Cuttings	14.00	@15.00
New Light Oxfords	10.00	@11.00
New Light Prints	9.00	@10.00
New Mixed Cuttings	4.25	@ 4.75
New Dark Cuttings	3.75	@ 4.25
No. 1 White Linens	10.50	@11.50
No. 2 White Linens	7.50	@ 8.50
No. 3 White Linens	6.00	@ 6.50
No. 4 White Linens	4.50	@ 5.50
Old Extra Light Prints	4.75	@ 5.50
Ord. Light Prints	4.25	@ 4.75
Med. Light Prints	3.75	@ 4.25
Dutch Blue Cottons	4.50	@ 5.00
Ger. Blue Cottons	4.25	@ 4.50
Ger. Blue Linens	4.50	@ 5.00
Checks and Blues	3.75	@ 4.00
Linsay Garments	3.25	@ 3.50
Dark Cottons	3.20	@ 3.35
Shoppery	3.05	@ 3.15
French Blues	4.25	@ 4.75

Bagging

Prices to Mill F. o. b. N. Y.

Gunny No. 1—		
Foreign	3.15	@ 3.30
Domestic	3.25	@ 3.40
Wool, Tares, light	3.00	@ 3.10
Wool, Tares, heavy	3.10	@ 3.20
Bright Bagging	2.90	@ 3.05
Mixed Bagging	2.40	@ 2.50
Sound Bagging	2.50	@ 2.75
Roofing Bagging	2.30	@ 2.40
Manila Rope—		
Foreign	6.50	@ 7.00
Domestic	6.50	@ 7.00
New Bu. Cut	3.50	@ 4.00
Hessian Jute Threads—		
Foreign	4.00	@ 4.25
Domestic	3.25	@ 3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, White, No. 1	3.60	@ 3.90
Hard, White, No. 2	3.25	@ 3.50
Soft, White, No. 1	3.10	@ 3.25
Flat Stock—		
Stitchless	1.45	@ 1.55
Overissue Mag	1.45	@ 1.55
Solid Flat Book	1.40	@ 1.50
Crumpled No. 1	1.25	@ 1.35
Solid Book Ledger	1.80	@ 1.90
Ledger Stock	1.60	@ 1.70
New B. B. Chips	.65	@ .75
Manilas—		
New Env. Cut	2.45	@ 2.60
New Cut. No. 1	1.75	@ 2.00
Extra No. 1 old	1.40	@ 1.50
Print	1.20	@ 1.30
Centainer Board	1.00	@ 1.10
Bogus Wrapper	1.00	@ 1.10
Old Krafts Machine compressed bales	2.05	@ 2.15
News—		
No. 1 White News	1.85	@ 1.95
Strictly Overissue	1.05	@ 1.15
Strictly Folded	.95	@ 1.05
No. 1 Mixed Paper	.65	@ .75
Common Paper	.45	@ .55

Twines

Cotton—(F. o. b. Mill)—		
No. 1	.43	@ .48
No. 2	.41	@ .43
No. 3	.40	@ .42
India, No. 6 basis—		
Light	.19	@ .20
Dark	.17	@ .19
B. C., 18 basis	.39	@ .41
A. B. Italian, 18 Basis	.51	@ .61

Finished Jute—			
Dark, 18 basis	.30	@	.31
Light, 18 basis	.28	@	.30
Jute Wrapping, 3-6 Ply—			
No. 1	.20	@	.23
No. 2	.18	@	.20
Tube Rope—			
4-ply and larger	.15	@	.17
Fine Tube Yarn—			
5-ply and larger	.20	@	.28
4-ply	.21	@	.24
3-ply	.22	@	.25
Unfinished India—			
Basis	.14	@	.15
Paper Makers' Twine			
Balls	.12	@	.13
Box Twine, 2-3 ply	.14	@	.15
Jute Rope	.20	@	.40
Amer. Hemp, 6	.30	@	.32
Sisal Hay Rope—			
No. 1 Basis	.14	@	.16
No. 2 Basis	.10	@	.12
Sisal Lath Yarn—			
No. 1	.14	@	.15
No. 2	.11	@	.13
Manila Rope	.18	@	.19

CHICAGO

Paper

F. o. b. Mill

All Rag Bond	35	@	40
No. 1 Rag Bond	25	@	35
No. 2 Rag Bond	14	@	25
Water Marked Sulphite	9	@	12
Sulphite Bond	7	@	10¾
Sulphite Ledger	9½	@	12
Superfine Writing	18	@	24
No. 1 Fine Writing	14	@	18
No. 2 Fine Writing	12	@	14
No. 3 Fine Writing	9	@	12
No. 1 M. F. Book	5½	@	7½
No. 1 S. & S. C. Book	6¼	@	7¾
Coated Book	8	@	10
Coated Label	8	@	10
News—Rolls, mill—	3¾	@	4½
News—Sheets, mill	4	@	4¾
No. 1 Manila	4½	@	5½
No. 1 Fibre	4¾	@	5¾
No. 2 Manila	3½	@	4
Butchers' Manila	3¾	@	4¾
No. 1 Kraft	5¾	@	6¼
No. 2 Kraft	5	@	5.50
Wood Tag Boards	4¼	@	6
Sulphite Screenings	2.75	@	3.00
Manila Tissue, 24x36 sheet	7	@	7¼
White Tissue, 20x30 sheet	7	@	7¼
Boards, per ton—			
Plain Chip	50.00	@	52.50
Solid News	52.50	@	55.00
Manila Line Chip	57.50	@	60.00
Container Lined—			
85 Test	70.00	@	72.50
100 Test	75.00	@	77.50

Old Papers

F. o. b. Chicago

Shavings—			
No. 1 Hard White	3.50	@	3.60
White Envel. Cuttings	3.50	@	3.60
No. 1 Soft Shav.	3.25	@	3.35
No. 1 Mixed	1.90	@	1.95
No. 2 Mixed	1.75	@	1.80
Ledger and Writings	1.65	@	1.70
Solid Books	1.55	@	1.60
No. 1 Light Books	1.20	@	1.25
Blanks	2.15	@	2.25
Manila Envelope Cuttings	2.75	@	—
Ex. No. 1 Manila	2.60	@	2.65
Print Manila	1.25	@	1.30
Folded News (over-issue)	1.15	@	1.20
Old Newspapers—			
No. 1	1.05	@	1.10
No. 2	.90	@	.95
Mixed Papers—			
No. 1	.95	@	1.00
No. 2	.85	@	.90
Straw Clippings	.95	@	—
Binders' Clippings	.90	@	—
Kraft	2.35	@	2.40
New Kraft Cuts	2.70	@	2.75
Roofing Stock, f. o. b. Chicago, Net Cash—			
No. 1	53.00	@	—
No. 2	51.00	@	—
No. 3	49.00	@	—
No. 4	43.00	@	—

BOSTON

Paper

Ledgers—			
Sulphite	.08½	@	.18
Rag Content	.18	@	.36½
All Rag	.38	@	.50
Bonds—			
Sulphite	.07½	@	.14
Rag Content	.16	@	.33½
All Rag	.36½	@	.51
Writings	.08½	@	.20
Superfines	.20	@	.48
News	.04	@	.06½
Book, M. F.	.06¼	@	.10¾
Book, Super	.07½	@	.11
Book, Coated	.09½	@	.20
Coated Litho.	.10	@	.15
Label	.09½	@	.15
Jute Manila No. 1	.12	@	.13
Manila, Sul. No. 1	.05	@	.06
Manila, Sul. No. 2	.03¾	@	.04¼
No. 1 Kraft	.06¼	@	.06½
No. 2 Kraft	.05¾	@	.05½
Common Bogus	.03½	@	.04
Straw Board	45.00	@	47.50
News Board	42.50	@	45.00
Chip Board	42.50	@	45.00
Single Manila Pulp lined board	57.50	@	60.00
Single White, patent coated board	75.00	@	85.00
Wood Pulp Board	80.00	@	85.00
Binder Boards	75.00	@	85.00
Tarred Felts—			
Regular	61.00	@	63.00
Slaters	66.00	@	68.00
Best Tarred, 1 Ply, roll	1.50	@	1.60
Best Tarred, 2 Ply, roll	1.70	@	1.80
Best Tarred, 3 Ply, roll	2.00	@	2.10

Old Papers

Shavings—			
No. 1 Hard White	4.00	@	4.25
White Blank News	1.75	@	2.00
Manila Env. Cuttings	2.80	@	3.00
No. 2 Hard White	3.25	@	3.35
No. 1 Soft White	3.10	@	3.25
No. 2 Soft White	2.25	@	2.50
No. 1 Mixed	1.60	@	1.75
No. 2 Mixed	1.25	@	1.50
Solid Ledger Stock	2.00	@	2.25
Writing Paper	—	@	1.70
No. 1 Books, Heavy	1.60	@	1.80
No. 1 Books, Light	1.40	@	1.50
No. 1 New Manila	2.50	@	2.60
No. 1 Old Manila	1.75	@	2.00
Print Manila	1.05	@	1.20
Old Kraft	2.00	@	2.25
Overissue News	1.00	@	1.20
Old Newspapers	.90	@	1.00
No. 1 Mixed Paper	.60	@	.65
Box Board, Chip	.60	@	.65

Bagging

Price f. o. b. Boston

Gunny No. 1—			
Foreign	1.12½	@	2.00
Domestic	2.00	@	2.12½
Manila Rope	6.00	@	6.50
Mixed Rope	1.50	@	1.62½
Scrap Burlaps	1.25	@	1.50
Wool Tares, heavy	2.00	@	2.13
Mixed Strings	1.50	@	1.62½
New Burlap Cuttings	2.00	@	2.25

Domestic Rags (New)

Price f. o. b. Boston

Shirt Cuttings—			
New White No. 1	.13½	@	.14
Silesias, No. 1	.09	@	.09½
New Unbleached	.12½	@	.13
Washable	.06	@	.06½
Fancy	.07	@	.07¼
Cottons — according to grades, Blue Overall	.09½	@	.10
New Blue	.05½	@	.06
New Black, soft	.06	@	.06¾
Khaki Cuttings	.05½	@	.06
Corduroy	.04	@	.04½
New Canvas	.10½	@	.11

Domestic Rags (Old)

Price f. o. b. Boston

White No. 1—			
Repacked	7.50	@	8.00
Miscellaneous	6.50	@	7.00
White No. 2—			
Repacked	5.50	@	6.00
Miscellaneous	4.75	@	5.50
Thirds and Blues—			
Repacked	3.75	@	4.00
Miscellaneous	3.00	@	3.25
Roofing Stock—			
No. 1	2.25	@	2.37
No. 2	2.12½	@	2.25
No. 3	1.50	@	1.75
No. 4	1.15	@	1.20

PHILADELPHIA

Paper

Bonds	.09	@	.53
Ledgers	.13½	@	.40
Writings—			
Superfine	.13½	@	.20
Extra fine	.12	@	.22
Fine	.20	@	.26½
Fine, No. 2	.16	@	.25
Fine, No. 3	.12	@	.20
Book, M. F.	.08	@	.11
Book, S. S. & C.	.09¼	@	.12½
Book, Coated	.11½	@	.20
Coated Lithograph	.10	@	.13
Label	.10	@	.13
News	.04¼	@	.05
No. 1 Jute Manila	.12	@	.13
Manila Sul., No. 1	.07	@	.10
Manila No. 2	.06	@	.08
No. 2 Kraft	.05	@	.08
No. 1 Kraft	.07	@	.08
Common Bogus	.03½	@	.04
Straw Board	55.00	@	60.00
News Board	42.50	@	45.00
Chip Board	42.50	@	45.00
Wood Pulp Board (Carload Lots)	2.75	@	3.00
Binder Boards—			
Per ton	70.00	@	75.00
Carload lots	65.00	@	70.00
Tarred Felts—			
Regular	61.00	@	63.00
Slaters	66.00	@	68.00
Best Tarred, 1-ply (per roll)	1.70	@	1.80
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.10

Bagging

F. o. b. Phila.

Gunny, No. 1—			
Foreign	1.75	@	1.85
Domestic	1.65	@	1.70
Manila Rope	5.75	@	6.00
Sisal Rope	2.50	@	—
Mixed Rope	1.25	@	—
Scrap Burlaps	1.65	@	1.70
Wool Tares, heavy	2.00	@	2.13
Mixed Strings	1.00	@	—
No. 1, New Lt. Burlap	3.50	@	3.75
New Burlap Cuttings	3.75	@	—

Old Papers

F. o. b. Phila.

Shavings—			
No. 1 Hard White	3.65	@	3.70
No. 2 Hard White	3.25	@	3.40
No. 1 Soft White	2.75	@	3.00
No. 2 Soft White	2.05	@	2.25
No. 1 Mixed	2.00	@	—
No. 2 Mixed	1.25	@	1.30
Solid Ledger Stock	1.75	@	1.90
Writing Paper	1.50	@	1.75
No. 1 Books, heavy	1.45	@	1.60
No. 2 Books, light	1.15	@	1.25
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.75
Container Manila	1.15	@	1.20
Old Kraft	2.00	@	2.25
Overissue News	1.05	@	1.10
Old Newspaper	.65	@	.70
No. 1 Mixed Paper	.75	@	.80
Common Paper	.60	@	.70
Straw Board, Chip	.65	@	.70
Binders Bd., Chip	.65	@	.70

Domestic Rags—New.

Price to Mill, f. o. b. Phila.

Shirt Cuttings—			
New White, No. 1	.13	@	.14
New White, No. 2	.07½	@	
Silesias, No. 1	.08	@	.08¼
New Unbleached	.12	@	.12½
Washable	.05½	@	.05¾
Fancy	.07	@	.07¼
Cottons—according to grades—			
Blue Overall	.08¾	@	.09
New Blue	.04	@	
New Black Soft	.06	@	.06¼
New Light Seconds	.03½	@	.03¾
Khaki Cuttings	.05½	@	.06
Corduroy	.04	@	.04½
New Canvas	.09	@	.09½
New Black Mixed	.05	@	.05¼
Old			
White, No. 1—			
Repacked	7.00	@	7.25
Miscellaneous	6.25	@	6.50
White, No. 2—			
Repacked	.05½	@	.05¾
Miscellaneous	.05	@	.05¼
Thirds and Blues—			
Repacked	3.40	@	3.60
Miscellaneous	3.15	@	3.25
Black Stockings	4.00	@	4.25
Roofing Stock—			
No. 1	2.25	@	2.35
No. 3	2.15	@	2.25
No. 3	1.20	@	1.30
No. 4	2.10	@	2.20
No. 5A	1.40	@	—
B	1.25		nominal
C	1.15		nominal

TORONTO

Paper

(Mill Prices to Jobbers f. o. b. Mill)

Bond—			
Sulphite	.11½	@	.12½
Light tinted	.12½	@	.13½
Dark tinted	.14	@	.15
Ledgers (sulphite)	—	@	.13
Ledgers No. 1	34	@	
Ledgers No. 2	26	@	
Writing	.09½	@	
Writing S. C.	.10	@	
News, f. o. b. Mills—			
Rolls (carloads)	3.65	@	—
Sheets (carloads)	—	@	4.50
Sheets (2 tons or over)	—	@	4.75
Book—			
No. 1 M. F. (carloads)	8.25	@	—
No. 2 M. F. (carloads)	7.95	@	—
No. 3 M. F. (carloads)	7.25	@	—
No. 1 S. C. (carloads)	8.75	@	—
No. 2 S. C. (carloads	8.25	@	—
No. 3 S. C. (carloads)	7.75	@	—
No. 1 Coated and litho	14.50	@	—
No. 2 Coated and litho	13.50	@	—
No. 3 Coated and litho	12.75	@	—
Coated tinted	.15	@	—
Wrapping—			
Rag Brown	4.75	@	—
White Rap	5.25	@	—
"B" Manila	5.50	@	—
No. 1 Manila	6.50	@	—
Fiber	6.50	@	—
Kraft, M. F.	7.00	@	—
M. G.	7.15	@	—

Pulp

(F. o. b. Mill)

Ground wood	30.00	@	33.00
Sulphite easy bleaching	62.50	@	65.00
Sulphite news grade	50.00	@	55.00
Sulphite, bleached	78.00	@	—
Sulphate	65.00	@	70.00

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut.	3.60	@	—
Soft White Book shavings	3.00	@	—
White Blk. News	1.80	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.50	@	—
Light and Crumpled Book Stock	1.35	@	—
Ledgers and Writings	1.75	@	—
Solid Ledgers	1.75	@	—
Manilas—			
New Manila Cut.	—	@	1.60
Printed Manilas	1.20	@	—
Kraft	2.05	@	—
News and Scrap—			
Strictly Overissue	.90	@	—
Folded News	.90	@	—
No. 1 Mixed Papers	.70	@	—

Domestic Rags—

Price to mills, f. o. b. Toronto

	Per lb.		
No. 1 White shirt cuttings	.15	@	.15¼
No. 2 White shirt cuttings	.07¼	@	.08
Fancy shirt cuttings	.09¼	@	.10
No. 1 Old Whites	—	@	—
Third and blues	.05½	@	.05¾

New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL,
Wednesday, January 7, 1925.

The paper market spent the week adjusting itself to the conditions of the new year. Sales organizations were tied up in conferences at which plans were laid for strenuous sales campaigns which are calculated to make the most of possible business. Actual business transactions were neither numerous nor voluminous but this can be attributed to the lapse which always follows the holidays and which accompanies the inventory period. Paper men, however, continue to talk in an optimistic manner. The miscalculations made by them last year have made them a little wary of predictions but they are unanimous in the opinion that better business will rule 1925 than marked 1924. They cannot see any reason why this should not be a normal year and they are hopeful that it will prove a banner year. It will probably take two or three weeks for the market to settle down and steady itself but, after that, worth while business is looked for. This prediction covers the whole field for 1925 paper demand is not expected to play favorites and every branch of the industry promises to share impartially in the prosperity which is looked for.

News print is swinging along with its characteristic leadership. The new 1925 price went into effect on January 1 and good business is being booked. There are no fears for the future of news print and 1925 may establish a new record for it.

Tissues which were in great holiday demand are still having a fair call, boards are in excellent demand and coarse and fine papers are in a moderately satisfactory state.

Mechanical Pulp

Little ground wood business was looked for last week but orders were somewhat better than the anticipation. After inventory is completed it is believed that the movement of ground wood will be extensive. Prices remain firm. The present offering of foreign pulp is not large.

Chemical Pulp

Consumers of chemical pulp have not been in a buying mood the past week. Prices continue firm and the tendency is toward an advance. The textile lockout in Sweden went into effect on January 1 and it is said that there is a likihood of the pulp and paper mills being drawn into the controversy. Pulp men are not inclined to credit this report as the paper and pulp mills during the past year adjusted their labor troubles and their employess are said to be satisfied with existing conditions. In event of sympathetic action on their part in this new labor disagreement, however, it is bound to have a marked effect on the pulp market here.

Old Rope and Bagging

While the week was a rather quiet one with old rope the prices are remaining firm and collectors and producers are holding their meager accumulations rather than grant any concessions. Bagging is moving satisfactorily with roofing bagging as one of the leaders. Prices hold firm and a price change or two during the week were to a higher level. With supplies confined to a very limited quantity and with the demand growing for every grade, it is probable that wholesale changes in price will be recorded and that they will all be along an upward trend.

Rags

While fair interest has been maintained in rags there was a falling off in mill demand during the week. Prices are holding firm on domestic rags and many grades of foreign rags are today quoted at a figure in excess of that asked a week ago. Foreign rags are now enjoying a good demand. Collections improve slowly but there is an absence of any great accumulations. Everything considered the rag market starts the year under very favorable conditions.

Waste Paper

Inventory period has thrown a partial pall over the waste paper market. Orders booked from the mills during the week were small and few and far between. Mills are not overstocked according to all reports and while there is a waste paper lull just now it is believed that buying on a more generous scale is bound to develop soon and that business will get somewhere near where it should be.

Twine

Twine was quite rejuvenated by its holiday demand but this is over and the demand has undergone the inevitable slump which follows Christmas trading. However, twine has not gone back to the dullness which it experienced for so many weeks, and fair business is looked for from now on.

PHILADELPHIA TRADE HOPEFUL

(*Continued from page* 28)

trades. The Committee has among the paper trade representatives Norbert A. Considine, Paper House of Pennsylvania; Harry Donahue, Molten Paper Company; George W. Ward, D. L. Ward Company; Ralph Luft, D. L. Ward Company; Arthur B. Sherrill, Riegel & Co., and Howard Satterwaithe of the Garrett Buchanan Company.

Paper Makers Chemical Co. Fire

Local consumers of glaze paper chemicals were notified that owing to the damage done to the plant of the Paper Makers Chemical Company at Easton, Pa., there will be a curtailment of shipments. The fire took place December 20 and caused a loss to building and stocks of more than $120,000. The fire started in the chemical room where were kept the raw materials used in the manufacture of glazing compounds for coating papers and quickly extended to the other departments and the building structure.

Riegel & Co. Banquet

A holiday gathering with the members of the firm of Riegel & Co., as hosts to their employees, brought together the business family of that company at the Rittenhouse Hotel last Saturday. Each of the 30 banqueters was called upon to say a few words of cheer and these were spiced with jocular interpretations of the characteristics of the employees and members of the firm. Assistant Treasurer W. Predmore introduced Treasurer Arthur B. Sherrill of the firm who extended to the business family the greetings of the company and expressed appreciation for the cooperation extended throughout the year on the part of the workers. During the banquet the diners were given a musical treat of talent from trade circles. Treasurer Arthur B. Sherrill, who has considerable talent as a vocalist sang several of his famous songs while another musical genius of the trade, Harry Beckman, of the Dill and Collins Company accompanied him on the piano. The musical program was supplemented by vaudeville. At the close of the festivities Mr. Predmore presented to Mr. Sherrill an outfit of golfing togs, the gift of the employees. Each of the business family was given a Christmas memento. To the ladies, a gift of beaded bags was made and to the men engraved gold cuff links.

Power Companies to Go to Court

[FROM OUR REGULAR CORRESPONDENT.]

HOLYOKE, Mass., January 6, 1925.—The Turners Falls Power Company has petitioned the Holyoke Water Power Company for permission to string power lines across the land of the latter company and has been refused. In order to reach the powerhouse of the Holyoke Street Railway Company, which the Turners Falls Company recently bought, the shortest route would be across the Water Power Company's land. The matter will now be taken to the courts.

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Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
Wednesday, January 7, 1925.

The chemical market has not yet recovered from the quiet the holidays brought and business during the past week has been decidedly off. Things are not shaping up as speedily as many have been anticipating and the chemical men are now talking more conservatively of the future than they did a week or two ago. They still believe that business is going to be good but they are equally confident that the times they are looking forward to will not be here before February 1. There is still more or less dissatisfaction over prices and this is hurting the demand for some of the commodities. As long as this dissatisfaction prevails it is plain to be seen that the demand on these partcular commodities will continue to be confined to hand to mouth orders. There seems to be no disposition on the part of the manufacturers, however, to come down on the present prices and so price maintenance may be purchased only at the expense of holding off considerable business. On the other hand there are commodities which are doing especially well and that fact may be attributed to the general satisfaction with the price. Business predictions are everywhere optimistic but the chemical market is in a speculative mood, feeling that while future business may be good there is a very serious question as to just how good the reality will prove.

BLANC FIXE.—Blanc fixe underwent no change during the past week. It entered the new year with a fair demand but with many orders being held off. There has been no disposition yet on the part of the holdovers to loosen up and so blanc fixe is being prevented from making any spectacular start toward a 1925 record. The powder is quoted at from $75 to $80 a ton and the pulp at from $55 to $60.

BLEACHING POWDER.—In regard to bleach practically the same conditions exist as in blanc fixe. The week has seen no change and there is a great deal of business bottled up and not finding its way to the market. Contracts are not being renewed as rapidly as they should be and at the start of the year it looked like another case of spot buying for some time to come. Buyers still feel the price is too high but the manufacturers show no sign of weakening and are adhering strictly to their price which is from 1.90 to 2.15 cents a pound.

CAUSTIC SODA.—Caustic soda keeps on in a very satisfactory condition. The demand remained good right through the holidays and caustic soda entered the new year under about as favorable conditions as any item in the market. There is more future buying, contracts are being placed for 1925 and inquiries are frequent. The price is from 3.10 to 3.15 cents a pound.

CASEIN.—Casein is holding its own and is doing very well. The demand is consistent and improvement is a certainty. It is selling at from 10 to 11 cents a pound.

CHINA CLAY.—There is nothing new to be said in the case of China clay. The demand is good and some sizable orders are being placed daily. The price on the imported grades is from $16 to $20 a ton and the price on domestic grades from $12 to $15 a ton.

CHLORINE.—Chlorine is suffering from a lack of attention due to the feeling that the price is too high. Here again the price factor is making a lot of trouble and clearly accounts for the indifference manifested in the market in regard to this commodity. Contract renewals are slow about coming in and the immediate outlook is none too promising. The price is from 4.50 to 7.00 cents a pound in tanks.

ROSIN.—Rosin continues in a routine way to answer a fair demand. The situation regarding it has not changed since a week ago and it is still being quoted at from $6.00 to $6.25.

SALT CAKE.—Salt cake had another quiet week and there is no indication of any early activity for it. There is some business both spot and contract but its volume does not measure up to what it should. It is quoted at from $17 to $20 a ton.

SODA ASH.—The demand for soda ash continued to be excellent. Contracts at the 1925 schedule are being constantly renewed and a further awakening in activity is looked for almost any day. The price is 1.38 cents a pound on a flat basis at the works.

SULPHATE OF ALUMINA.—The prices on sulphate of alumina are holding firm and business continued very good during the past week. Stock is being moved with stated regularity, excellent contracts are being booked and, in fact, sulphate of alumina faces the brightness of prospects. The schedule price is being strictly adhered to and the buyers are displaying a liberality in their buying which indicated they may feel that buying can be done at a better purpose now than at a later time. It is quoted at from 1.40 to 1.45 cents a pound for the commercial grade at the Eastern works and from 2.20 to 2.35 cents a pound for the iron free.

SULPHUR.—Buyers are taking out their regular contract amounts in sulphur and the price holds at from $18 to $19 a ton.

TALC.—Talc is constantly looking up. The tone of the talc market is infinitely better than it has been in months. The price is still from $16 to $17 a ton.

Toronto Trade Gets Good Start

TORONTO, Ontario, January 5, 1925.—The paper trade is off to a good start for the coming year. Jobbers have finished stock taking and, on completing their inventories, find that they have done better in most cases so far as turnover is concerned than a number of them had anticipated. After being absent from the road for the last fortnight, salesmen for paper houses again started out this week. The new long price lists are out and some changes have been made. On all lines of paper, quotations are now listed at so much per hundred pounds and on less than hundred pound lots, the figures are so arranged that they come out even, in quarter, half cent, etc., instead of fractions, so that estimates can be easily computed.

It is understood that the export on book papers from Canadian mills to Australia and New Zealand is improving and one large manufacturing concern will ship this month five car loads to these two countries. Prospects for increased shipments are good.

In the pulp market, ground wood is firmer and it is more difficult to secure the required quantities. This is probably due to weather conditions and the reduced quantity of grinding by reason of ice, snow and water. Prices for mechanical pulp at the mill run from thirty to thirty-three dollars a ton while bleached sulphite is selling at seventy-eight and unbleached around sixty-five. The chemical pulp situation shows some strengthening, which is welcomed by the producers.

"Safety" Bombs Fired

[FROM OUR REGULAR CORRESPONDENT.]

CHILLICOTHE, Ohio, January 5, 1925.—An unique method of signifying that the day has ended without mishap, and that safety first prevails at the plant, has been adopted by Safety Director Ernest Augustus of the Mead Pulp and Paper Company.

Each "safety first day" is announced in the evening by the firing of an aerial bomb accompanied by a pyrotechnic display.

Robert Knowles Goes With Reading Paper Mills

[FROM OUR REGULAR CORRESPONDENT.]

READING, Pa., January 5, 1925.—Robert Knowles, for several years with the Jessup & Moore Paper Company at the Rockland Mill is now with the Reading Paper Mills.